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Textile World

NEW YORK
ATLANTA

MARCH 1940

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GREENVILLE

A McGRAW-HILL PUBLICATION

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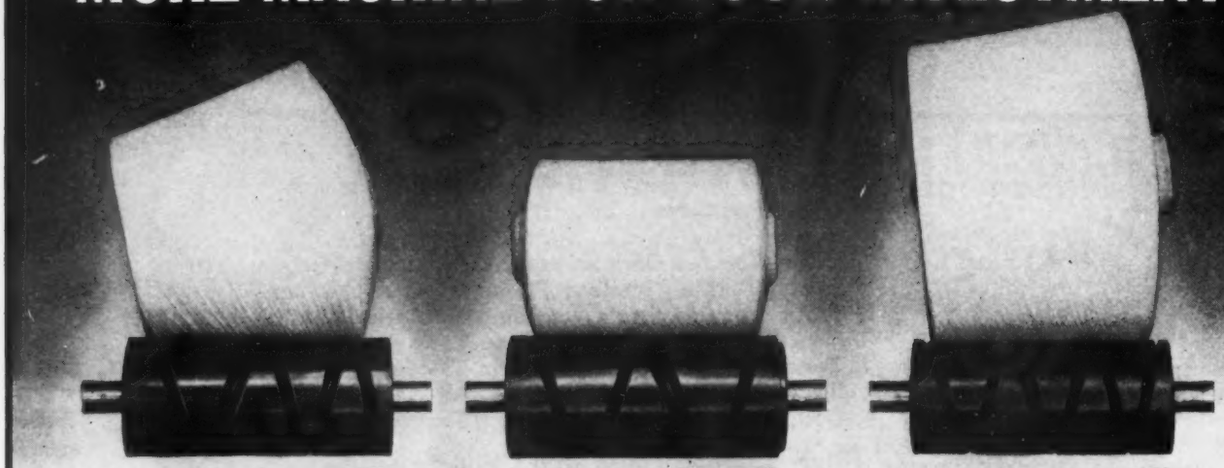

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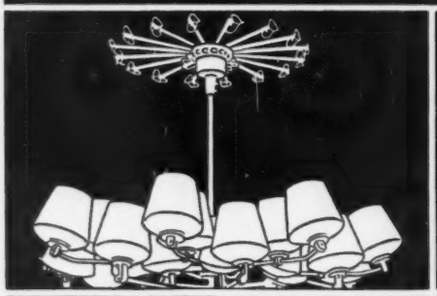

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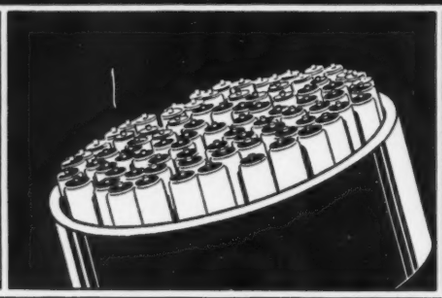

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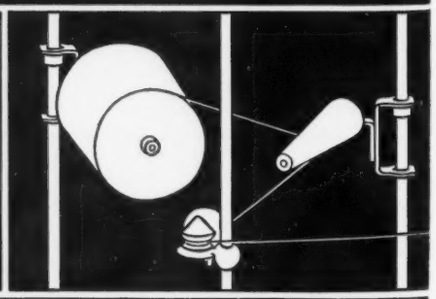

And better beams and weave room savings result from cleaner yarn, minimum and uniform tension, better slubbing.

TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

It Would Be Funny if It Weren't Sad

ANYONE WHO KNOWS anything about the finances of textile mills during the last decade, gets a grim laugh out of an anti-trust action brought against a group of men engaged in print cloth manufacture. But the laugh soon becomes a grimace of pain, when one realizes the tragedy this may mean, not only to the print-cloth group, but to the textile industry as a whole and to its employees.

Briefly, it means that it is still held to be illegal for a highly competitive industry to take steps toward stabilization. It means that attempts to prevent intermittent periods of over-production followed by inevitable short-time or complete shut-down, are still classed as monopolistic, even if the industry is publicly known as a consistent money-loser. It means that action clearly in the public interest is branded as anti-social.

To be fair to the Department of Justice, it cannot be held responsible for this situation. It is true that certain individuals may be over-zealous in pushing for action on a crazy case like the print-cloth case, while public money could be infinitely better spent on eliminating rackets which infest so many branches of business. But the fact remains—as one Department of Justice official put it—that neither he nor the Department made the law. It merely administers it.

The defects in the anti-trust laws have been recognized for a long, long time. The crime is that nothing has been done about them. Something *must* be done pretty soon.

Way back in 1931, the late Walker D. Hines, then chairman of the Board of the Cotton-Textile Institute, put his finger on the real problem—just as he was in the habit of doing with all problems which he tackled. Speaking before the Taylor Society, he said: "I take it that a law in the very broad terms of the Anti-Trust Act should be interpreted in harmony with present-day conditions"—and added:

"If there ever was a time when artificial and fragmentary rules could be applied with the result that an agreement to balance production with demand would be condemned without regard to the need for stability, that time is past and we are now justified in asking both administrative and judicial agencies to consider, in the light of present-day realities, whether an undertaking for rational planning for the avoidance of overproduction shall be regarded as an agreement *in restraint of trade* on the one hand or as an agreement *in promotion of trade* on the other." (Italics are ours.)

THERE YOU HAVE IT. But we are convinced from our contacts that the administrative agencies have no inclination to look beyond the deed to the intent. Consequently, we feel that the only source of relief is from new legislation. Legislation which will specify that unbridled competition, runaway production and demoralized prices are, in particular cases, just as much "unfair competition" and just as much "in restraint of trade" as monopolistic practices are in other situations. Legislation which will put a premium, instead of a penalty, on constructive moves made by the majority of an industry in an attempt to safeguard the livelihood of both employers and employees.

The textile industry—as one of the highly competitive industries badly in need of such relief—should take the lead in a drive for new and up-to-date legislation. The machinery for such action exists in the National Council of Textile Industries and in the coordination conferences which have been held periodically under the leadership of Dr. Claudius T. Murchison. The subject has been considered carefully at those conferences, as pointed out in Miss Irene Blunt's annual report. (See page 51.)

Irrespective of the outcome of the print cloth case, revised legislation is essential. The textile associations, acting in unison, have here one of their greatest opportunities for service to the industry. More power to them!

Douglas G. Woolf

THE EDITOR SAYS

Just Sit Tight!

THE UNCERTAINTY which clouds the immediate outlook for textile manufacturers right now is no private textile sensation. It is public property. All business is sharing it.

There are two extreme schools of thought. One school believes we're in for another 1937 collapse in this country, and that we're now on our way. The other school believes we have gone through a corrective period since the first of the year; that the recession is now flattening out, as they put it; and that the upward cycle in business will be resumed again in April.

There are many different shadings of opinion in between. The personal leaning of this writer is toward the belief that business is not headed toward another toboggan, and that it should turn upward within a few months. However, what with war, politics and other messes, we admit frankly that we're guessing. Anyone who plays this hunch and loses won't get his money back at this counter. We don't believe *anyone* can tell at this moment just which direction the business situation is going for the rest of 1940.

There is one thing that *can* be told, however. Whatever may be ahead in the way of grief can be aggravated by failure of business—and particularly a competitive business like textiles—to heed certain signs, and watch its production and price policies accordingly. We are convinced that the chaos in textiles in the last-half of 1937 could have been reduced to an orderly recession, if manufacturers had heeded the signs which were so apparent at the end of the first quarter of that year.

There is still time in this 1940 situation to guard against collapse. If manufacturers will refrain from turning out vast quantities of goods that no one wants at the moment, and will refrain from being stampeded into sales at prices which mean a loss, nothing awful will happen. That's a promise!

The Certificate Plan

TWO ITEMS warrant emphasis this month with reference to Secretary Wallace's certificate plan, alias processing tax. One is Dr. Murchison's brilliant analysis of its effect upon the consumer: a retail sales tax of 12% on all cotton products, costing the American consumer approximately $300,000,000 a year in higher prices for cotton apparel and household goods alone.

The other item is our Washington correspondent's report that the odds are greatly against the passage of the certificate plan by Congress. He thus re-affirms the good news which he first sent for our January issue.

In view of this prospect, the cotton-textile industry's best strategy is to watch events carefully, to have its ammunition ready for a campaign when and if necessary, but not to go into a major offensive until such necessity exists. Too often a premature attack on pending legislation merely tends to consolidate the proponents' efforts.

We hope time will bear out our Washington correspondent's indication, and that a real fight on the certificate plan will never be necessary.

"An Inside Tip"

Editor, TEXTILE WORLD

Permit a reader to offer you three cheers for your splendid article—"An Inside Tip on a Red-Hot Investment" which appeared in the January issue.

In my very humble opinion you have hit the nail squarely on the head. Here's hoping it goes *all the way down* in the minds of many mill executives. During the last 15 years of hard work (no college) in the textile industry I have personally been in the same boat as your $110 per month young man and have seen many cases just like it.

Thousands of dollars of *net profit* are lying around in the minds of key men and highly skilled workers in the textile industry—today. They are simply ideas—and ideas they will remain—until some inducement is offered which will convert these ideas into profitable investments.

Incidentally these ideas are not always necessarily a part of the day's work but rather a by-product of an active brain, after the day is over and very often far into the night. I know from experience. What the textile industry needs today more than ever is new ways to increase production, lower manufacturing costs, new types of merchandise, new time and labor saving devices for textile machinery.

There are exceptions of course but the average key man and skilled worker will supply what is needed for a very modest reward.

I have often hoped that some editor would write exactly what you did—the truth about a vital subject. Hope you will repeat in the near future.

At the Textile Show, which I hope to attend, I would like very much to meet an editor who is not afraid to *write* what he *thinks*.

More power to you and best wishes.

A READER

Editor, TEXTILE WORLD:

I simply could not refrain from writing you about your editorial "An Inside Tip on a Red-Hot Investment." You certainly hit the nail on the head.

With the exception that my husband has had a few more years of experience and makes a little more than your Mr. X, the situation is identical. Anyway, I guess it's some consolation in knowing there are other textile men in the same boat.

At this time, Mr. Woolf, I would like to express my sincere respect and admiration for the TEXTILE WORLD. My husband looks upon it as a bible. At first when I was real hard up for something to read, I would tackle TEXTILE WORLD. Now I look forward to each issue, not only from a feminine viewpoint of new fabrics and such, but also from a commercial and technical angle.

I hope 1940 will prove a big boom to you and your comrades in the textile field.

A READER'S WIFE

Editor, TEXTILE WORLD:

I have intended to write you just a few lines in regard to the fine letter of Douglas G. Woolf, editor of TEXTILE WORLD, which appeared in the January issue under the title "An Inside Tip on a Red-Hot Investment." I think Mr. Woolf is exactly right and wish we had more editors like him. It doesn't pay to be always changing key-men; when a firm gets a good man they should pay him salary enough to keep him. Again, I wish to say Thank You, Mr. Woolf.

"AN OLD HEAD"

Acknowledged with Thanks

WE ARE INDEBTED to readers for the many constructive letters received concerning the "Next Decade in Textiles" section of our Annual Number. These will form the basis for a symposium in a later issue. Meanwhile, we invite further comments, either for background information or for quotation.

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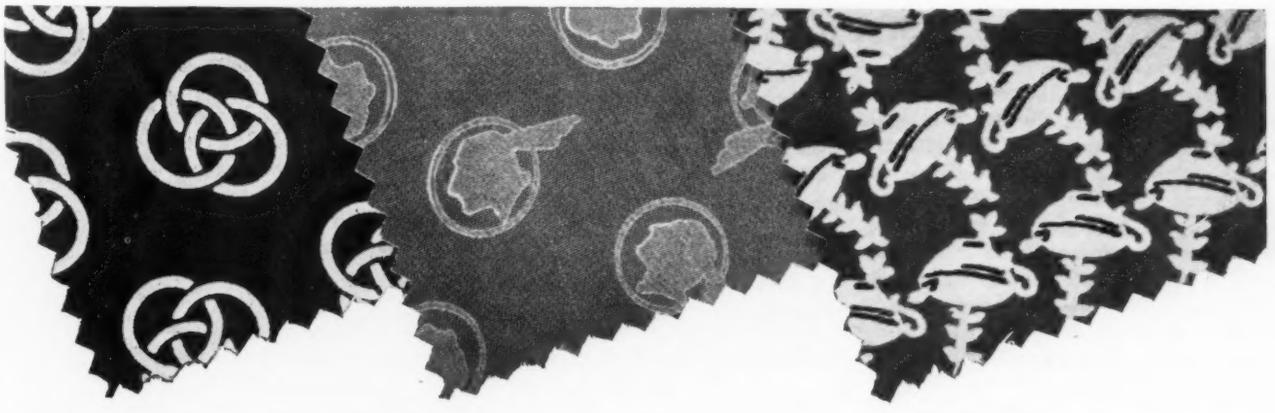


"American Symbol Prints"

A NEW IDEA in subject-matter for printed fabric designs is fair front-page news. It has been given front-cover position in this issue of TEXTILE WORLD. "American Symbol Prints," designed and marketed by Princess Fabrics, Inc., New York, glorify well-known trade-marks, while at the same time they offer dress materials of charm and distinction.

The front cover shows one of three window displays at R. H. Macy & Co., New York retailer, last month featuring American Symbol Prints and on the right hand edge are four examples of the designs: Socony Vacuum's flying horse, Uneeda Biscuit, Greyhound buses and Wrigley's Spearmint. Above are Pontiac's Indian head, Ballantine's three rings, Maxwell House coffee cups.

The idea for this line was born in the mind of Bernard Baller of the company's advertising agency, Gussow-Kahn & Co. All the owners of the brands used (there are 14 of them) have given releases for this use. The photograph of the Macy window on the front cover is by Virginia Roehl.

Odds Against Certificate Plan

Most everybody except Wallace puts thumbs down on new processing tax

By PAUL WOOTEN
TEXTILE WORLD'S
Washington Correspondent

ODDS ARE GREATLY AGAINST Henry A. Wallace, the Secretary of Agriculture, in his effort to put through a processing tax on cotton under the nom de plume of the certificate plan. The President is against it. The Secretary of the Treasury says such a tax is flagrantly regressive. Even an active advocate of spending, Marriner S. Eccles, chairman of the Federal Reserve, is strongly against it. The House Committee on Agriculture seems cold to the proposition. Chairman Marvin Jones, without advocating it, suggests that price-fixing may be simpler because it does not involve substitute materials.

Support for the proposition comes from a few of the left-wing spenders who are not particular how funds get out, just so they are disbursed. The proposition also will have some support in Congress if a parity payment appropriation is not forthcoming. As this is written indications are that Congress will approve a substantial sum for parity payments. If this is done pressure for the processing tax will be greatly reduced.

Secretary Wallace contends that the plan does not constitute a tax. He refers to it as the "principle of marketing certificates" and says the program would be based on the authority to regulate commerce given by the Constitution.

Members of the Ways and Means and Finance Committees contend that the plan is a tax despite its streamlining. Ordinarily such legislation would have to be approved by the legislative committees having jurisdiction over tax matters, but in this case there is no disposition on the part of either committee to assert its rights.

The general expectation at this writing is that the Committee on Agriculture will refuse to report out the plan. It is conceivable, however, that enough pressure could be brought on one or the other of the committees to get the plan before Congress. It would be particularly vulnerable on the floor because the proposal would be regarded by the opposition as a consumption tax levied principally upon the lowest income groups. With the growth of corporate farming many of the principal beneficiaries are the large, low-cost operators of farms and plantations who make very substantial profits.

Sen. Allen J. Ellender, a member of the Committee on Agriculture, has little hope that the certificate plan will be approved for major crops. He is urging that it be tried out on rice, one of the minor crops. After observing its effects in actual operation a more intelligent decision then could be made as to its application to cotton, wheat and other crops.

THE PLAN AS SUBMITTED to the House Committee on Agriculture early in March provides for the issuance of certificates, having a fixed value, to the producers who comply with agricultural adjustment and soil conservation requirements. The value of the certificate would be such as to give the producer the parity price on the portion of his crop that would enter the domestic market. The estimate of consumption would be made each year. In the case of cotton mills, owners would be required to purchase certificates to cover all sales and to return the certificates for cancellation.

Using the estimated farm prices for the 1939–1940 season the plan would work out as follows for cotton:

Illustration of Marketing Certificates for Cotton:

1. Quantity of marketing certificates issued would equal normal production of entire allotment, or 12,700,000 bales.
2. Price of certificates would equal rate of returns needed, together with market price, to give producers the parity price for that portion of the crop which is consumed domestically.

a. Assumed parity price per lb.	15.9¢
b. Assumed market price per lb.	8.5¢
c. Amount price per lb. below parity	7.4¢
d. Assumed domestic consumption	7,000,000 bales
e. Returns to be derived from certificates (7,000,000 bales at 7.4¢ per lb.)	$259,000,000
f. Quantity of certificates issued (item 1)	12,700,000 bales
g. Price of certificates per pound; (item e) divided by (item f)	4.1¢

3. Number of certificates required by manufacturers and importers in connection with the sale or importation of articles manufactured from cotton would be fixed so that all certificates issued would be used:

a. Assumed quantity of cotton used in manufactured articles consumed domestically, bales	3,500,000
b. Assumed quantity of certificates issued, bales	6,350,000
c. Number of certificates (in lb.) for each lb. of cotton consumed domestically (6350 ÷3500)	1.8

4. Total cost of cotton for domestic consumption would equal parity price:

a. Assumed market price of cotton per lb.	8.5¢
b. Assumed number of certificates required for each lb. used for domestic consumption	1.8
c. Assumed price of certificates per lb.	4.1¢
d. Cost of 1.8# certificate at 4.1¢	7.4¢
e. Total cost per lb. of cotton for domestic consumption: (8.5¢ plus 7.4¢)	15.9¢

5. Returns to cooperating producer per pound of cotton:

a. Assumed market price	8.5¢
b. Assumed price of certificates	4.1¢
c. Assumed conservation payment	1.6¢
	14.2¢
d. Percent assumed total return of parity price	89%

Chairman Jones expresses the opinion that it would be impossible to put all possible substitutes for cotton on an equal basis. He estimates that the certificate proposal would reduce domestic consumption to 5,000,000 bales. He thinks outright price-fixing would be simpler. Although he does not advocate it, he thinks it ought to be given consideration. If the Government were to offer to pay 16¢ per lb. for the 7,000,000 bales likely to be used domestically he is convinced that it would not be necessary to buy a pound of cotton. He thinks the processors would come forward and take their requirements at the Government price.

Mr. Jones feels that the complicated character of the certificate plan and the lags in connection with the estimates of consumption may defeat it. Were domestic consumption to fall substantially below or rise materially above the estimate, injustice would be done the processors in one case or the farmers in the other.

"I Am a Cog in a Machine"

By HUDSON NIX

Mr. Nix is an employee in the water works department of the Tubize Chatillon Corp. at Rome, Ga. He emphasizes the fact that the discussion reflects his personal viewpoint, as the officials of the company knew nothing about his writing the article until it appeared in *This Week Magazine*. We are indebted to that publication and to Mr. Nix for permission to reprint his statement. It is a refreshing change from the industrial dirge to "lost opportunity" heard so frequently nowadays.—*Editor*.

✦ ✦ ✦

"**JUST A COG IN A MACHINE**, replaceable at a moment's notice."

I am a shift worker in a huge industrial plant, and this is the way a famous writer has defined my position in life. The definition is correct, yet I take great pride in my job, because small as it is, it is vital to a great business—the business of life and progress.

For eight hours each day I am the human cog responsible for the operation of a number of pumps, motors and machines. They must be kept running to supply water to a rayon mill, which gives employment to more than two thousand other human cogs, including the resident plant manager and the president of the company in a Park Avenue office a thousand miles away. Each of us performs a job that is necessary in the operation of this one plant, which itself is merely a cog in the rayon industry of the country. In turn, the entire rayon industry is just a cog in the country's industry as a whole. And industry, like agriculture and government, is only a cog in the machine that is American democracy.

So I accept the famous writer's definition. I *am* a cog in a machine—but that doesn't mean for a moment that I can't be a definite individual as well. True, I work with clocklike regularity at a routine task for 40 hours each week, but I have 128 hours in which to satisfy my human needs and desires. The radio, movies, sports, books and magazines, hobbies, the church and politics—all of these and many more provide outlets for my interests as an individual.

As a cog in a machine, I have distinguished company. It includes Henry Ford, Owen D. Young, the Du Ponts and countless other important men.

"As a cog in a machine, I have distinguished company"

And in other machines there are other human cogs carrying on the duties of President, governor, senator and judge. even the scientist, the philosopher and the artist are cogs in their special machines. As in my case, each of these can be replaced. If he could not be, then the machine would be crippled, progress stop and democracy perish.

I AM PARTICULARLY GLAD that I'm a cog in our industrial machine. Industry has its faults, of course, but it seems to me that its aim is the happiness of all of us. For the very growth of this machine depends upon its ability to bring more comforts and conveniences within the reach of more people every year. I am a cog in the machine that is the never-failing servant of humanity. The health, happiness and prosperity of all the people, taken together, is a measure of the success of this machine. And every time a family buys a new radio, a refrigerator, an automobile, or a cake of soap, that family enjoys the fruit of my labor. Just as I am benefited by the work of millions of other cogs every time I pick up the telephone to call a doctor, turn on a light or read my newspaper.

As a cog in a machine, I am a member of the noblest brotherhood on earth —the brotherhood that works to promore health and happiness for all the people and a stronger democracy for our country. Alone, one single cog seems insignificant, but judged by its contribution to the progress of the whole machine, its work is of great importance. And because each cog is so vital to the whole machine, progress demands that there must be a quick replacement whenever one stops doing its work properly. Knowing that I could be replaced at a moment's notice does not make me feel insignificant. Rather, I am heartened by the knowledge that another cog would carry on in my place or in the place of any other cog, whether it operates in industry or government. In no other way could I be sure of happiness and progress for my children.

Laborers, doctors, clerks, scientists, statesmen, soldiers, businessmen, mechanics, policemen and artists are all cogs in a machine—the machine that is run by all humanity. And, instead of being depressed, I am inspired by the famous writer's definition. I am proud of being a cog in a machine, because I realize that each cog plays an important part in the great machine that is America. (*Copyright 1940 by the United Newspapers Magazine Corp.*)

Ten Years of Cotton Textiles

1939 distribution at all-time peak—Spindles in place lowest since 1905

A PEAK FOR ALL TIME was set in the distribution of cotton textiles in 1939, according to the ninth annual survey of the Association of Cotton Textile Merchants of New York, released by W. Ray Bell, president. While production was inferior to the 1937 record by slightly more than 3%, mill surplus of substantial volume also moved into distributive channels.

In the face of this activity, the number of spindles in place at the beginning of 1940 was below 25,000,000 for the first time since 1905. This seeming paradox is explained by the fact that total activity in 1939 represented the highest annual working time per average active spindle on record, with a gain of 705 hours over the preceding year.

Starting as it does with the first year of the depression and charting the course of the industry through last year's distribution peak, this report is of even greater interest and significance than usual. The data appear in the table on this page.

Measured by spindle hour activity, mill operations for last year were approximately 22% greater than in 1938, reaching a total of over 92,559,000,000 active spindle hours. The gain in cotton consumption was larger by 24.75%, to a total of over 7,367,000 bales. This was only 51,000 bales below the high consumption of 1937. The larger percentage gain in cotton consumption probably reflects both a stronger proportionate demand for heavy fabrics and higher efficiency of machinery.

Assuming the 1937 relationship between total spindle-hour activity and yardage production, the estimate for 1939 is over 9,145,000,000 sq. yds. of all kinds of cotton woven goods. By adding imports and deducting exports, a net yardage of new goods made available for domestic consumption is found in excess of 8,890,000,000 sq. yd., or a per capita yardage of 67.76 sq. yd. based on estimated population.

EQUIPMENT STATISTICS for the cotton spinning industry do not indicate the extent to which cotton spindles have been transferred to the rayon industry. The loss of over a million spindles in place during the year brings the total below 25,000,000 for the first time since 1905. Installation of new machinery, chiefly replacements and additions, was double that of the preceding year but less than one-half of the 1937.

Active spindles reached their low of 21,788,286 in June and the high month was December with 22,777,936. The average for the twelve monthly reports was 22,306,734, about 264,000 more than last year but 1,773,000 less than in 1937.

Total activity represents the highest annual working time per average active spindle on record, with a gain of 705 hours over the preceding year. During the final quarter, the operating rate exceeded capacity based on 80 hours weekly.

Even in that period, the lure of exceptional profit opportunities, which distinguished the late 1936 experience, was lacking and over 2,000,000 spindles remained inactive. In June, idle equipment had exceeded 3,750,000 spindles. The existence of competitive disabilities thus indicated now suggests a reduced estimate of slightly more than 23,000,000 spindles with capability of sharing in the work of supplying market needs.

Data below assembled by The Association of Cotton Textile Merchants of New York from Bureau of The Census reports and information obtained through the courtesy of machinery manufacturers. Cloth production for non-census or even years and for 1939 has been estimated to correspond to spindle-hour activity during the preceding census years.

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
EQUIPMENT											
Spindles in place at beginning of year	34,541,486	33,608,494	32,326,526	31,442,174	30,938,340	30,889,484	29,253,444	27,700,194	26,704,476	25,986,620	24,943,302
Increase or decrease from preceding year	725,600	932,992	1,281,968	884,392	703,834	48,856	1,636,040	1,553,250	995,718	717,856	1,043,318
New installation, additions and replacements	251,936	205,068	143,908	348,568	529,840	214,874	469,316	772,724	178,280	349,416	
OPERATION											
Spindles active at any time during year ending July 31st	31,245,078	28,979,646	27,271,938	26,894,860	27,742,462	26,700,946	24,664,428	25,419,110	24,774,004	23,731,050	
Spindles idle during same period	3,296,408	4,628,848	5,054,588	4,547,314	3,195,878	4,188,538	4,589,016	2,281,084	1,930,472	2,255,570	
Average number of active spindles based on twelve monthly reports	27,269,470	25,674,107	23,250,757	24,873,270	25,119,435	23,421,150	23,373,147	24,079,936	22,042,442	22,306,734	
Intermittent spindles (being the difference between average active spindles and those active at some time during year)	3,975,608	3,305,539	4,021,181	2,021,590	2,623,027	3,279,796	1,291,281	1,339,174	2,731,562	1,424,316	
Percentage relation of average active spindles to spindles in place	78.95%	76.39%	71.92%	79.11%	81.19%	75.82%	79.9%	86.93%	82.54%	85.84%	
Spindle hours run	76,702,655,168	77,793,298,853	70,218,347,911	86,580,232,828	75,711,412,882	76,017,361,934	91,773,252,676	95,591,131,816	75,925,187,178	92,559,108,308	
Hours run per average active spindle	2,813	3,030	3,020	3,481	3,014	3,246	3,926	3,970	3,444	4,149	
MARKET											
Production in square yards	6,448,392,000	6,955,391,000	6,278,222,000	7,866,040,000	6,878,579,000	7,139,276,000	8,613,837,000	9,445,736,000	7,502,168,000	9,145,765,000	
Exports in square yards	416,289,000	366,959,000	375,446,000	302,042,000	226,306,000	186,565,000	200,501,000	236,251,000	319,634,000	367,466,000	
Imports in square yards	35,517,000	34,732,000	29,436,000	41,348,000	41,533,000	63,674,000	114,195,000	147,320,000	98,282,000	111,817,000	
Available for domestic consumption	6,067,624,000	6,623,164,000	5,932,212,000	7,605,346,000	6,693,806,000	7,012,385,000	8,527,531,000	9,356,805,000	7,240,816,000	8,890,116,000	
Population at July 1st	123,091,000	124,113,000	124,974,000	125,770,000	126,626,000	127,521,000	128,429,000	129,257,000	130,215,000	131,200,000	
Available for per capita consumption in square yards	49.29	53.36	47.47	60.47	52.86	54.99	66.40	72.39	55.61	67.76	

"Modern Pioneers"

Textile industry and allied fields well represented among honored inventors

WILLIS H. CARRIER
Carrier Corp.

SANFORD L. CLUETT
Cluett, Peabody & Co.

CAMILLE DREYFUS
Celanese Corp. of America

TEXTILE MANUFACTURE and allied divisions of American industry were well represented among the inventors and research workers honored as "Modern Pioneers" in a nation-wide tribute last month. Conceived by the National Association of Manufacturers, this unique testimonial took the form of a series of fourteen regional meetings reaching its climax in a dinner at New York Feb. 27, when 101 inventors received scrolls each of which termed the recipient "a modern pioneer on the frontier of American industry, in recognition of distinguished achievement in the field of science and invention." A top selection of 18 individuals and one group of 11 jointly received silver plaques as "national" Modern Pioneers.

The whole program was an eloquent answer to the defeatist attitude too prevalent nowadays. It helped to focus attention on the fact that there still are new frontiers in American business—and that the same traits of resourcefulness, energy and courage which conquered the old frontiers still are what is needed for forward march today. Over 500 men from all over the country were honored as Modern Pioneers and there were 68 more given honorable mention.

Among the individuals in the textile and allied fields who were honored as "Modern Pioneers" were the following:

WALLACE HUME CAROTHERS (deceased), WILLARD E. CATLIN, DONALD D. COFFMAN, WINFIELD W. HECKERT, BENJAMIN W. HOWK, GEORGE D. GRAVES, WILBUR A. LAZIER, JOHN B. MILES, JR., WESLEY R. PETERSON, FRANK R. SIGNAIGO, and EDGAR W. SPANAGEL, jointly—all of Nylon Division, E. I. du Pont de Nemours & Co., Wilmington, Del.

WILLIAM HALE CHURCH, E. I. du Pont de Nemours & Co., Buffalo, N. Y.

SANFORD LOCKWOOD CLUETT, Cluett, Peabody & Co., Inc., Troy, N. Y.

CAMILLE DREYFUS, Celanese Corp. of America, New York.

HARRY S. DRUM, Smith, Drum & Co., Philadelphia, Pa.

LEON A. GRAYBILL, Firestone Cotton Mills, Gastonia, N. C.; RUSSELL B. NEWTON, Bibb Mfg. Co., Columbus, GA.; and EUGENE C. GWALTNEY, Saco-Lowell Shops, Biddeford, Me., jointly.

JAMES P. GREY, JR., Grey Hosiery Mills, Hendersonville, N. C.

THADDEUS STOWE GRIMES, Lummus Cotton Gin Co., Columbus, Ga.

HAYDEN BENJAMIN KLINE, Industrial Rayon Corp., Cleveland, Ohio.

WALTER LARKIN, Fidelity Machine Co., Philadelphia, Pa.

STERLING W. ALDERFER and HAROLD W. GREENUP, jointly, Firestone Rubber & Latex Products Co., Fall River, Mass.

FRANK REECE, Reece Button Hole Machine Co., Boston, Mass.

GAMES SLAYTER, Owens-Corning Fiberglas Corp., Newark, Ohio.

Individuals from the chemical, air-conditioning, instrument, electrical and engineering fields include the following:

LEO HENDRIK BAEKELAND, Bakelite Corp., New York.

JOHN N. CAROTHERS and others, Monsanto Chemical Co., Anniston, Ala.

WILLIS HAVILAND CARRIER, Carrier Corp., Syracuse, N. Y.

FRANK CONRAD and others, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

JAMES L. COX, Hygrade Sylvania Corp., Salem, Mass.

GEORGE OLIVER CURME, JR., Carbide & Carbon Chemicals Corp., New York.

GUSTAVUS JOHN ESSELEN, Boston, Mass.

WALTER GEIST, Allis-Chalmers Mfg. Co., Milwaukee, Wis.

HAROLD FREDERICK HAGEN, B. F. Sturtevant Co., Boston, Mass.

THOMAS RANDOLPH HARRISON, Brown Instrument Co., Philadelphia, Pa.

WALTER FREDERICK HAROLD, Stewart Warner Co., Bridgeport, Conn.

WILLIAM B. HODGE, Parks-Cramer Co., Charlotte, N. C.

FREDERICK G. HUGHES, New Departure Division, General Motors Corp., Bristol, Conn.

IRVING LANGMUIR and others, General Electric Co., Schenectady, N. Y.

ALBERT J. LOEPSINGER, Grinnell Co., Providence, R. I.

CLASSON E. MASON, Foxboro Co., Boston, Mass.

WILLIAM B. NEWKIRK, Corn Products Refining Co., Argo, Ill.

MAURICE W. PHELPS, Solvay Process Corp., Syracuse, N. Y.

EDWIN S. PILLSBURY, Century Electric Co., St. Louis, Mo.

ROY A. SHIVE, Calco Chemical Co., Bound Brook, N. J.

WILLIAM B. HODGE
Parks-Cramer Co.

GAMES SLAYTER
Owens-Corning Fiberglas Corp

WALTER LARKIN
Fidelity Machine Co.

The old City Hall at Syracuse, N. Y., as it looked when the first joint meeting of the National Association of Wool Manufacturers and wool growers was held there on Dec. 13, 1865, when the wool-tariff policy which held through many years was first agreed upon (Photo courtesy Syracuse Chamber of Commerce)

Wool Manufacturers Mark 75th Year

N.A.W.M., oldest national trade association, will celebrate in Boston on April 4

WHILE SHERMAN was marching through Georgia, and nearly nine months before the assassination of Lincoln, a group of 26 American wool manufacturers signed a circular letter to all of their industry calling a meeting "for the purpose of consultation, and, if it should be thought advisable, of forming a National Association of Woolen Manufacturers for our mutual interest and advantage."

That meeting was held Oct. 5, 1864 at the Massasoit House in Springfield, Mass. Apparently organization was thought advisable, for at another meeting on Nov. 30, 1864, the National Association of Wool Manufacturers was formed, under the presidency of one of the leading men behind the movement, Erastus B. Bigelow, of Boston, Mass.

Thus began what is today the oldest national trade association of continuous existance in the United States. The N.A.W.M. is going to celebrate its 75th anniversary at a meeting and banquet in Boston April 4. The day will start with a buffet breakfast, hunt style at the Copley-Plaza. A business meeting will follow. There will be a tea for the ladies at Henry Ford's Wayside Inn at Sudbury, Mass., in the afternoon. Among the banquet speakers will be Boake Carter, commentator.

THE 75-YEAR HONOR ROLL

Presidents of the N.A.W.M. from founding in 1864 to date:

Erastus B. Bigelow, Boston	1864-70
Theodore Pomeroy, Pittsfield	1870-71
J. Wiley Edmands, Boston	1871-77
Rufus S. Frost, Boston	1877-84
William Whitman, Boston	1884-92
Rufus S. Frost, Boston	1893-94
William H. Haile, Springfield	1895-99
Charles H. Harding, Phila	1900-03
William Whitman, Boston	1904-10
John P. Wood, Phila	1911-17
Frederic S. Clark, N. Billerica	1918-20
John P. Wood, Phila	1921-25
Franklin W. Hobbs, Boston	1926-33
Harold S. Edwards, Los Angeles	1933
Arthur Besse, New York	1933-

Secretaries of N.A.W.M. from founding in 1864 to date:

John L. Hayes	1865-87
S. N. D. North	1889-03
John Bruce McPherson	1903-08
Winthrop L. Marvin	1909-19
Paul T. Cherington	1919-22
Walter Humphreys	1922-

Perhaps the most striking fact which impresses those who read the articles of association, the original by-laws, and the speeches of the early executives of this association, is the completeness of the set-up from the start and the similarity of associational aims of 75 years ago with those of today.

The original by-laws of the Association provided for a paid and permanent secretary "whose time and talent will be devoted to the interests of the Association." There were also four standing committees as follows—(1) finance, which had largely to do with the income and expenses of the Association; (2) statistics, which was to collect and distribute accurate information bearing upon the conduct of the industry; (3) machinery, which was to investigate and report on inventions and proposed improvements; (4) raw materials, which was to consider the supply and consumption of wool, the amount and character of the home growth, and the means best to increase and diversify it.

The first major operation undertaken by the new association came in November, 1865, when a meeting was called

for Dec. 13 at the City Hall in Syracuse, N. Y., at which it was asked that all the State raw wool associations should be represented "for the purpose of consultation in relation to their mutual interests, especially as to the representation to be given respecting the wool producing and wool manufacturing interests before the U. S. Tariff and Revenue Commission." This Commission had been organized in June, 1865, under a mandatory act signed by President Lincoln March 3, 1865. At the Syracuse meeting the principle of the compensatory duty which was ultimately formulated into the tariff law of 1867 was worked out. This principle has appeared in most tariff laws since then.

As a result of the bringing together of the various State wool associations in Syracuse in December, 1865, the National Wool Growers Association was formed, which body, almost throughout its history, has shown a cooperative attitude toward manufacturers, meeting jointly with the manufacturers on the threshold of tariff changes in 1871, 1882, 1888, 1897 and 1908.

For its first secretary, the National Association of Wool Manufacturers chose John L. Hayes, who served in that capacity for 22 years, until his death in 1887. The first office of the Association was set up at 53½ Summer St., Boston, although it made a practice of holding many of its early meetings in New York at the St. Nicholas Hotel.

Another evidence of the similarity between trade problems in the '60s and those current more recently, is the fact that the Association's annual meeting in 1868 laid plans to adopt rules governing claims by buyers of goods for alleged damage or imperfection of manufacture. "The evil of such reclamation particularly during a falling market, has become very serious," said one of the speakers on that occasion.

Further evidence of early initiative is found in the "Joint Exposition of the Wool Industries of the United States under the auspices of the American Institute" which was held in New York in 1869 under sponsorship of N.A.W.M. This had a recent echo in The "Pageant of the Golden Fleece."

During the '70s the Association held firm to its principles of protection by tariff, for reduction and final abolition of the internal revenue act on wool, and in opposition to a Canadian reciprocity treaty. The secretary spent much of his time in Washington, which is remindful of a more modern day. In 1882 the Association favored the formation of a tariff commission, and such a commission was formed with Secretary Hayes of the Association as its head.

Secretary S. N. D. North, carried the banner of the Association through the tariff fight of the '90s, when William Whitman was president of the Association. Mr. North acted as secretary to the Ways and Means Committee during preparation of the Dingley act.

The Association was active on matters connected with labeling as early as 1902. It has consistently opposed distinctions between virgin and reworked wool, while supporting measures of the "Honest Merchandise" type. It successfully worked out a labeling standard with the Bureau of Standards, and more recently sponsored a bill for mandatory labeling of wool and part-wool fabrics.

In 1913, the Association began an important statistical service in the collection and distribution of figures on active and idle machinery. At that time they were issued only quarterly. Since then the Bureau of the Census has taken over these statistics and they are now issued monthly.

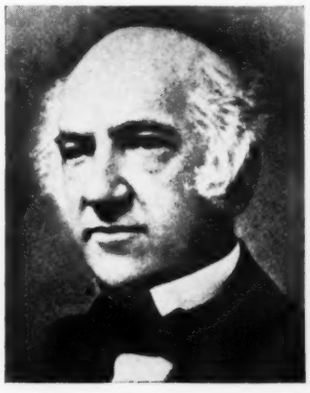
In the 1914 to 1919 period the Association entered vigorously into various duties connected with the war. In 1927 it founded, jointly with the then-existing American Association of Woolen & Worsted Manufacturers, the Wool Institute and cooperated in the cost accounting work done by the Institute. In 1930 meetings were held under the Association to consider a futures market for wool tops. In 1933 the Association was active in organizing the industry under NRA. These and many other more recent activities are well known.

One of the continuing services of the Association has been the issuance of its "Bulletin" which has proved a continuous record of the industry since the first issue in January 1869. That first issue begins with the naive statement of confidence in the Association's reason-for-being which reads as follows: "The National Association of Wool Manufacturers . . . has now entered upon the fifth year of its operation. Its existence in full activity for so long a period . . . is evidence that it has supplied a want heretofore existing."

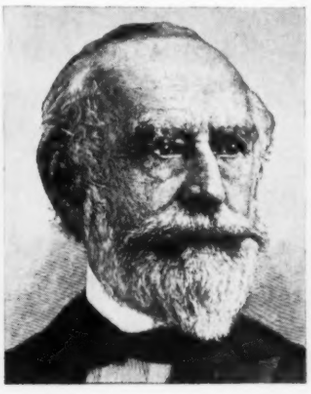
Recognition of the industry's responsibility to the public is also found in this first issue of the Bulletin in which the secretary says, "This Association may fairly claim some service to the public. The progress in the woolen manufacture in this country during the last five years has been greater than during any ten years of its previous history. The country has had the benefit of better and more reliable fabrics."

Some of President Bigelow's statements have a particularly prophetic note. In 1864 he said:

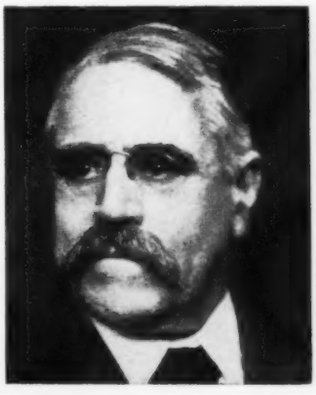
"We trust that it will be an early, a constant, and a cherished object of the Association to promote harmony and cooperation among the different classes of American producers. . . . It is our belief that the important industries of the nation will most effectually promote their own advantage and the public prosperity by moving hand-in-hand in regard to those questions of national policy which affect the condition and prospects of the working and producing classes. . . . So far as our society, by its action or by its bearing, shall contribute to the removal of misapprehension and prejudice, the results will be gratifying to us all."



Erastus B. Bigelow, first president, N.A.W.M., 1864 to 1870

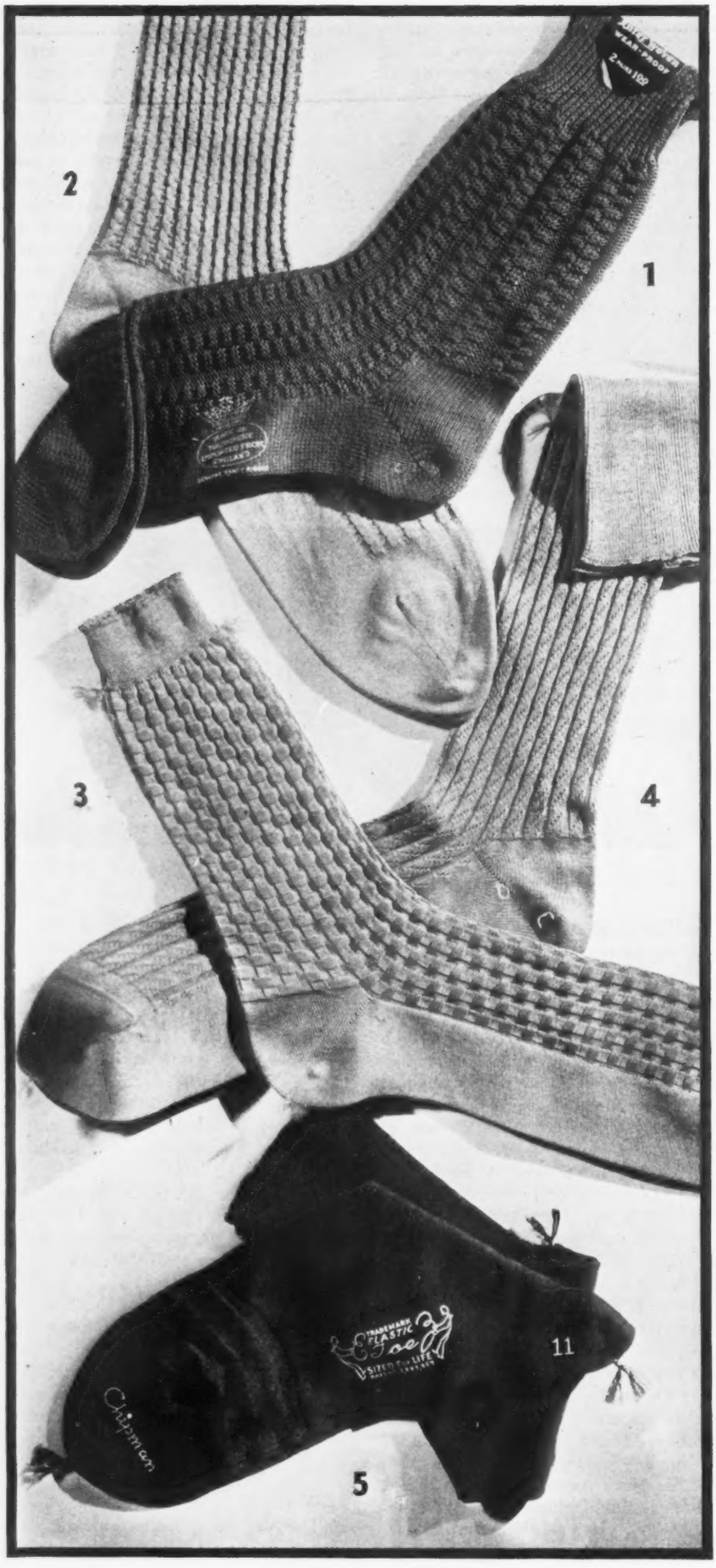


John L. Hayes, secretary, N.A.W.M., 1865 to 1887



Charles H. Harding, president, N.A.W.M., 1900 to 1903

William Whitman, president, 1884 to 1892 and 1904 to 1910



Novelty Construction Is Newest Feature in Half Hose

FANCY TEXTURES produced on links-and-links machines are on the upswing in men's hosiery. Retailing at 50¢ in most cases, such numbers have caught the favorable attention of buyers.

Also among the newest constructions is the use of covered rubber yarn near the toe to provide perfect fit and to do away with bunching and binding, thus adding to the comfort and durability.

At left are pictured several typical numbers from the new lines just placed on the market.

Nos. 1 and 2 are from Interwoven Stocking Co.: the first is a slack sock of low count, soft spun cotton yarn in fancy rib; the second is another fancy rib, made of fine mercerized yarn.

Nos. 3 and 4 are from Standard Hosiery Mills: the first is a waffle effect made on links-and-links machine, in slack length; the second is a fancy rib of standard length. Both are made of fine mercerized yarns on Komet machines.

No. 5 is the elastic toe model offered by Chas. Chipman's Sons Co. The elastic yarn used is Laton made by U. S. Rubber Co.

"I Want a Cotton Dress"

By MARCIA E. TURNER

Although Miss Turner is an associate professor in the Department of Home Economics Education, Iowa State College, she disclaims any connection with textiles and clothing "except for a very fervent and unprofessional interest in selecting and wearing clothes." When we advised her we intended using her story she expressed gratification because, as she put it, "I really do want a cotton dress!"

Miss Turner's complaint is not a lone one. We have heard it from many other women. We wish some of our readers would tell us what we should tell her.

—Editor.

✦ ✦ ✦

I WANT A COTTON DRESS. It is now March, but in a few months we shall be enduring the sticky heat of midsummer in Iowa, and I shall need a cotton dress. And anyway I like cotton. It does something to my self-esteem to feel fresh and crisp no matter what the thermometer says. I like the feel of it and the look of it, and above all I like the every-day cleanliness of it. This is not a testimonial for cotton, but a complaint because I can't find a cotton dress.

When I say I want a cotton dress, I don't mean a house dress at $1.98, or even one of its more glorified cousins at $5.98, that parade as identical quintuplets on the racks of department stores. I want a cool, sheer, washable cotton dress. I want a well-designed and well-made cotton dress. Moreover I want a cotton dress with some zip to it. It must be a size 18 or 20.

Now all this is the monotonous wail that I have made in every cotton shop and women's wear department from Dan to Beersheba, summer after summer, and with what results?

Answer: I wear rayon sheer and linen and chiffon.

I believe I am not unique in my demands. I belong to a profession in which standards for dress have to be reasonably high, but I have yet to find a woman, in or out of my profession, who does not search with ever discouraging results for a cotton dress.

I want a cotton street dress. Last summer a friend and I were preparing to attend a meeting for professional people in Chicago. It was toward the end of June and very hot, and though we had been repeating our little formula since February, in desperation we made a final and futile attempt, first in Des Moines and then in Chicago. In the end she found a smart black and white closely woven polka dot cotton print, up to specifications in every respect except as to the paramount one of coolness. Complete with a white linen coat, it cost $35. It would have been ideal for some Labrador lake resort. I bought a linen suit and a well-tailored blouse, but it had to be made of handkerchief linen.

I want a cotton afternoon dress. At the first session of the meeting in Chicago on a sultry Sunday afternoon when the large assembly of rather above average well-dressed women appeared in presumably their best and coolest afternoon frocks, I was able to see just one cotton in all that flock of wilted and perspiration soaked chiffons, and rayons. The wearer said she had made the dress herself from material she had had for a number of years. That let me out.

I want a cotton formal. Well, yes, the shops are full of organdies and piques, just the thing for college girls and debutantes. To be sure I once bought a cotton lace, eminently suitable for "the mature woman." But so did every one else. They still do. In silk materials I have no difficulty in finding every color in the wheel—gorgeous, indefinable shades and tints, gay splashy prints. But I want a cotton dress.

I SPENT A HOT DAY shopping in Memphis. "Ma'am? No, Ma'am, but we have some lovely chiffons. Have you tried the basement?" Finally I found an imported white dotted swiss for $16. Except for the material, it was not distinctive in any way, but it was cool. I wore it to a July Sunday dinner in Greenwood, Miss., down in the heart of the Deep South. I heard much about cotton subsidies and the plight of the cotton grower, but I was the only woman present who had found a cotton dress. Incidentally, that was three years ago and I have found not one white cotton dress other than uniforms since then. Why don't southern women wear cotton dresses? They can't find any, comparable to other materials in style, and quality, and design of material.

Occasionally I find proof that the kind of cotton dress I want does exist. Last summer among the heavy hop sacking and the coarsely woven voiles, among the ugly and the ordinary, I found a cotton dress that stood out like a jewel among junk. It was youthful—not kittenish; gay and colorful—not garish; smart—not severe; feminine—not fussy. But it was a size 16. And now summer is coming on again, and I want a cotton dress!

". . . and I don't mean a house dress at $1.98."

Joins School and Mill Training

Cooperative course at Georgia Tech develops students to meet modern needs

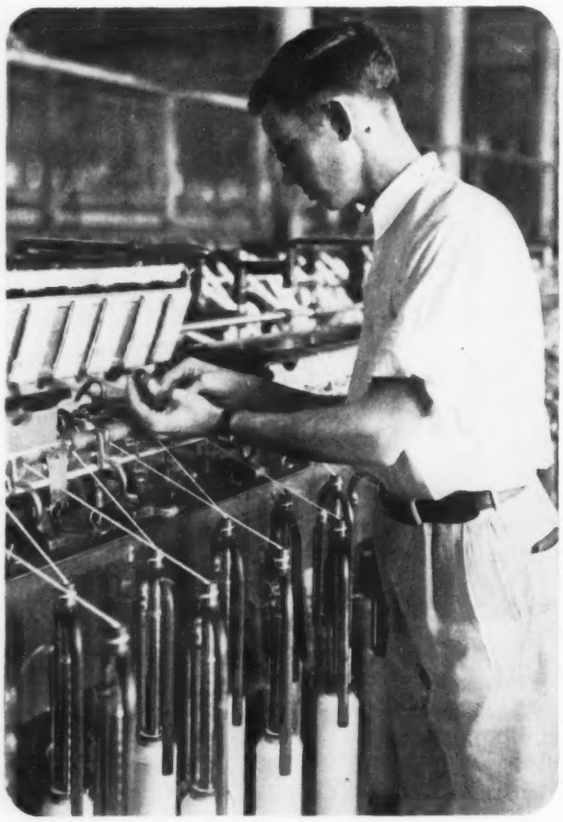
By J. E. McDANIEL
Director of Cooperative Courses,
Georgia School of Technology

GEORGIA SCHOOL OF TECHNOLOGY Cooperative Plan in Textile Engineering may be likened to an elixir which changes the commonplace and conventional form of textile education into an effectual and desirable new type conforming to present-day needs and demands.

The hand and the mind are concurrently brought together in acquiring knowledge and skill. Neither academic study without manual practice, nor the use of the hands without a comprehensive study of textile engineering fundamentals, will meet the full requisites of good textile manufacturing. Thus the cooperative five-year curriculum, alternating three months at college and three months on productive work, an educational bascule, fulfils the needs of modern textile industry.

Only students who have high scholastic standing and who are in fine physical condition are allowed to elect the Cooperative Courses. In this way industry gets students who are eminently qualified both mentally and physically to become five-year apprentices. Two students take care of one job: while one is at college a trimester, the other is at work for three months. The same two exchange places every three months with each other on college and practice work periods, until they receive their bachelor's degree in textile engineering. As a general rule, the graduates go back for permanent positions to firms where they worked as cooperative apprentices.

This kind of education solves many problems that have confronted both industry and technological institutions. Many mill presidents have rightly contended that the college graduates need much actual practical experience before shouldering the responsibilities of industry, and cannot acquit themselves well in an industrial way if they have only an observation or "facade" practical training during their college course. Long and incessant practice begets perfection; any other kind of training is desultory. Shop training should be done when the employe is young and impressible—the adolescent period at college. If he waits until his majority—the usual age of a college graduate—for shop experience, he will likely become discontented, thinking he has to spend too much time on practice work which any intelligent person could do. He then will seek some other position, textile or non-textile. The cooperative course undergraduate, during the plastic period of his life, grows up, so to speak, with mill employes, learning their characteristics, habits, and ways of living; all of which will benefit him immensely when he becomes a fixture, possibly as a supervisor in the mill. Perhaps this knowledge of the social and economic conditions of the mill people is of as much value to him as his training in mill operations.



H. M. Gibbons, senior cooperative textile engineering student, is shown at work in mills of Pepperell Mfg. Co., where he has spent his practice periods.

Mill officials rightly say that only industrious and energetic young men are wanted for textile industry. Since the Georgia Tech Cooperative Textile Plan of education is a long and arduous task, only ambitious and energetic young men, undaunted at hard work, elect the cooperative course.

College professors say that cooperative students are easy to teach; they are serious in their class work, wanting to learn all possible from the textbook, and wishing to know how they may apply what they learn in class to their apprenticeships in the plant. Their inquisitive attitude helps the professor to balance the theoretical with the practical content of the lecture, and at the same time prompts him to keep abreast of all modern and new textile operations.

I confidently believe that the cooperative graduate fulfils Plato's definition of an educated man: "He has perception, faith, understanding, and reason." The student who has completed the Cooperative Course is mentally alert, being able to comprehend the fundamentals of textile engineering; he is loyal and faithful both to his alma mater and his textile plant, which have provided him with a sound education; he has a thorough understanding of his fellow men, having had intimate contact both with the college student and the mill employe; he is rational and level-headed, for he has had to qualify both in the college classroom and at the textile plant.

Coordination of Associations

Stressed by Miss Blunt, in her report at Federation's National annual meeting

THE EMPHASIS which the National Federation of Textiles places on coordination of textile associational activities was again demonstrated in the report of Miss Irene Blunt, secretary, to the Federation's annual meeting Feb. 27. She high-lighted both the activities of the National Council of Textile Industries, and the conference of a large number of textile trade association executives held earlier in the year. In this connection she stated:

"The charter members of the Council, the Federation, the Cotton-Textile Institute and the National Rayon Weavers Association conferred during the year on possible projects that might be undertaken. A study of the economic effect of multiple shift operation, especially the third shift, was referred to a special committee of representatives of each of the three associations. Standardization of arbitration procedure, wherever possible, was approved and counsel for the Federation and the Cotton-Textile Institute were requested to confer and report to the Council. The replacement of obsolete equipment and distribution problems were considered to be the major trends for the future requiring a long-range program that needed the collaboration of all weaving groups, irrespective of the fibers used.

"A complaint filed by Assistant Attorney General of the United States, Thurman Arnold, against a group of cotton print cloth manufacturers in connection with a publicly announced agreement to limit operations to two shifts was the incentive for arranging the first general meeting of the Council at the Waldorf-Astoria Hotel on Jan. 5, 1940, at which Mr. Arnold was the guest of honor and speaker. The dinner meeting was attended by nearly 300 men prominent in the cotton, rayon and silk industries. It was the first public occasion in which the great weaving groups of the American textile industry had joined forces and the meeting demonstrated the community of interest that existed between them.

"Mr. Arnold's remarks were not publicized at his request, but he reviewed the work of the Anti-Trust Division of which he was in charge, in the campaign for strict enforcement of the anti-trust laws. He emphasized the necessity

G. H. Conze, reelected president of Federation

of maintaining the democratic principle of free competition and freedom from restraint of trade in any form whether it was by industry agreement, by labor union contracts or by individual operations. His viewpoint appeared to be that while the textile industry might in all fairness to employment and continued successful operation of mills, require cooperative action in surviving depressed conditions, the existing laws of the country did not permit any form of restraint of trade whether it was constructive or destructive.

"In his opinion, the troubles of the textile industry were more deep-seated than any that could be cured by arbitrary restraint. His investigations of conditions in other industries had convinced him that unreasonably high prices for some commodities due to illegal restraint of trade deprived products like textiles of their fair share of the people's income. The elimination of such restraints would eventually direct toward the injured industries their proper proportion of purchasing.

I. L. Blunt, reelected secretary-treasurer

"THE FEDERATION WAS HOST to a group of 30 executive officers of textile trade associations at a meeting held on Jan. 7, in the rooms of the Federation. The president of the National Council of Textile Industries, Dr. Claudius Murchison, outlined the impending dangers of a new processing tax on cotton, with the anticipated extension to competing fibers.

The circumstances leading up to the charges against the cotton print cloth group by the Department of Justice were reported upon by the executives of the associations concerned and a lengthy discussion ensued as to whether it would be feasible to support legislation that would permit an industry to act jointly under supervision of a Government agency for the solution of industry problems. The outcome of the present litigation would have to be known, it was believed, before conclusions could be reached. Among the organizations represented were the State associations of cotton manufacturers, the Mercerizers Association, the National Association of Textile Finishers, the Textile Fabrics Association, the National Rayon Weavers Association and the Thread Institute."

At the annual meeting the members elected as directors for the ensuing year: W. M. Brady, J. P. Stevens & Co., Ward Cheney, Cheney Brothers; G. H. Conze, Susquehanna Silk Mills; Jarvis Cromwell, Wm. Iselin & Co.; Wm. H. Hubbard, William Skinner & Sons; Alexander F. Ix, Frank Ix & Sons, Inc.; Wm. G. Lord, Galey & Lord, Inc.; William Menke, Menke Kaufman Co., Inc.; J. W. Schwab, Cohn-Hall-Marx Co.; Henry E. Stehli, Stehli & Co., Inc.; A. D. Walker, A. D. Walker & Co.; A. E. Wullschleger, Wullschleger & Co.; M. K. Yorks, Bloomsburg Silk Mill. Mr. Schwab and Mr. Wullschleger are new members of the Board.

The directors reelected G. H. Conze as president; M. K. Yorks, vice-president; I. L. Blunt, secretary-treasurer.

No Seconds Made

While learning to weave at Pacolet's New Holland plant

"THAT 'MACHINE' can't make seconds no matter how many mistakes a learner makes", declared H. M. Jackson, assistant superintendent of Pacolet Mfg. Co., New Holland, Ga. He was describing to TEXTILE WORLD's roving reporter a dummy loom which the mill had rigged up for instructing sweepers, battery fillers and other unskilled workers in the art of weaving. This device is part of a successful program for learners worked out by Mr. Jackson and M. C. Stone, superintendent.

The program for developing weavers, consists essentially of selecting promising young people in the mill and training them at the mill's expense. They are instructed in groups of two or three by the assistant superintendent for an hour a day for several weeks. During this hour they are paid regular wages; their lost time is absorbed by the other workers.

The mill believes the average weaver designated to instruct a learner is more likely to teach him "how much he can get away with" rather than the proper way of running a job. The Pacolet system of teaching is so set up that the learner is taught all the major phases of weaving before he ever touches an actual loom in operation.

The procedure of instruction follows:

1. The first lesson consists of teaching the proper method of tying a weaver's knot.

2. The learner is then shown the fundamental working parts of a loom —reed, harness, drop wires, etc.—and becomes familiar with their operation. Each part and motion is carefully explained.

3. The student then learns how to make a straight draw through several banks of drop wires on the back of the machine.

4. Having mastered straight draws, he carries the thread on through single-harness sets. Finally, he learns to make fancy draws through multiple-harness arrangements.

5. The next step is to draw the thread through the proper dent in the reed. It is impressed upon him that reed hooks should not be twisted while sticking through the dent.

6. It is very important that repeats in harness and in reed be counted off carefully and accurately. This is drilled into the learner until he is able to tell almost at a glance whether or not the repeats have been properly drawn.

7. He is then familiarized with the different types of selvages, and is taught to tie yarn in from the body of the selvage rather than from the edges.

8. A collection of faulty shuttles and bobbins is kept in the laboratory in order to illustrate actual causes of loom stoppage. The learner is taught to recognize these defects quickly in order to properly flag a loom.

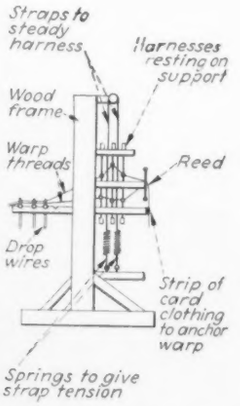
At the same time that this work on the dummy loom is going forward, samples of bad work are continually brought in and explained to the future weavers. Fundamental causes of these defects are stressed. This applies to finished goods as well as gray goods. At this point, the worker, although he has never touched a real loom, is capable of running a smash-hand job or a drawing-in job.

When the assistant superintendent is convinced that the learners are familiar with the fundamental practices of weaving, he then takes them into the weave shed and shows them what is known as "job routine." This includes name and description of actual loom parts, how to start and stop a loom, regular inspection of both front and back of looms, etc. The learner is further shown how to read spare marks on cloth, how to match picks, how to take off and mark cloth, how to smooth out beat-up places resulting from a loom slamming off, and when to flag looms. He is also shown the proper way to fill batteries, which normally is his regular current job. This serves two purposes: it results in better work in his present job, and in the future, as a weaver, he will insist on proper battery filling.

Eventually the learner is put on an actual job—or rather on one-half job since two learners are given one job between them at first. After perhaps a week, three learners are given two jobs, and finally one learner is given one complete job. During this training period, the overseer and assistant overseer are encouraging the new weaver and endeavoring to build up his confidence in his ability. Mr. Jackson believes that instilling self-confidence in the student is 90% of teaching. He does not put pressure on his students, but he does attempt to "shame" them at times for stupid mistakes. "If that stripped bobbin had teeth, it would have bitten you!" he might tell a learner who overlooks one of the main causes of loom stoppage. Mr. Jackson is kindly critical, and a standard piece of his advice is: "Don't bring your feelings in here on your sleeve. We all learn by making mistakes." And mistakes are always corrected—never passed up.

The success of this plan is testified by the fact that every person who has been taught weaving at Pacolet by this system is still working at the mill and doing well.

H. M. Jackson, assistant superintendent, (third from left) and W. S. Smith, overseer of weaving (second from left) instruct two students on the dummy loom. Learners are Miss Smith and Mr. Clark.



Cross-section of dummy loom for teaching learners at Pacolet. Warp is drawn-in exactly as on a real loom.

Bright, Despite War

French summer fabric openings show scant reflection of wartime hardships

By BETTY E. HIRSCHBERG
Paris, France

THE PARISIAN OPENINGS of summer fabrics last month disclosed to buyers an unusually extensive line of cottons, rayons, woolens and silks, designed in large part before the war, and therefore evidencing little of war influence. These novelties present the traditional high quality and richness of the French inspiration. The new fabrics appear in sharp contrast to the hard and dark, rough and unpleasant times which many of those associated with the Couture are experiencing as a result of war. The colors seem more than usually full of charm, brightness and richness, and indicate a vigorous intention to maintain the old-time prestige of Paris as the center of world fashions.

"Featherweight" is the new watchword for fashionable wool fabrics. Materials almost as delicate as cobwebs are shown, together with wool voiles, wool georgette crepes, very sheer twills and delicate fabrics with spongey surface. Several houses show worsted poplins, together with wool taffetas and wool marocain.

Tweeds hold an important place in the showing and they are offered in related groups for ensemble use in plain fabrics, plaids, checks, stripes, etc.

In the realm of silks and rayons a distinctive note is the use of very small elements in the designs, whether these be stripes or checks or little flowers, birds, etc. Printed patterns show use of novel subjects such as mermaids, nautical scenes, trophies, instruments, heads of women, old castles, words of friendship or greeting, lace, a flight of aircraft, telegraph wires, vegetables, ribbons, feathers, etc.

Patou's featured colors are taken from the French national flag, blue, white and red. He also makes generous use of black and navy. Other houses use blues and reds in varying shades.

Every effort has been made to facilitate service to American buyers and it is understood from the Department of Commerce in Paris that the allied shipping authorities will offer every possible courtesy.

1. Yarn-dyed stripes (6 colors to a repeat)
2. Typical floral print with tiny pattern
3. Woolen in gray and black
4. Print using words of greeting
5. Tweed with warp and filling in pairs
6. Etched pattern of sheer construction
7. Light-weight woolen of black and white
8. Novelty print with girls' names and faces

(1, 2, 5 and 6 are from Chatillon; 4 and 8 from Castelaine; 3 and 7 from Meyer)

Congress Tries to Play Safe

Action on farm parity, NLRB, wage-hour, etc., seems cautious in election year

From TEXTILE WORLD'S Washington Office

FARM PARITY PAYMENTS were left out of the 1941 Agriculture appropriation passed by the House. But when the bill went to the Senate, farm Senators wrote in a provision for $250,000,000, hoping to get $225,000,000. The decision will be made by the Senate-House conference committee. The Senators first considered an alliance with isolationists, who would help muscle in on defense appropriations. They also considered pinning hope on Sec. Wallace's "certificate" processing tax. As both courses seemed doubtful, they decided in favor of a direct attack on the Treasury, economy or no. Of course, the certificate plan will be unlimbered if the parity maneuver fails. If both fail, a high loan rate on cotton will be the third alternative.

NLRB amendment is being stalled by politicians who think that the country is sick of the mess, but who nevertheless fear the threat of labor's-rights defenders at the polls this fall. This Congress made three inquiries into Labor Relations: Senate committee heard (in two days) witnesses from CIO, which was omitted last year; House Labor Committee heard testimony on seven bills of amendment to NLRA; the Smith special House committee took the headlines by spotlighting such things as the Board teaming up with RFC, Wage-Hour, and other Federal agencies in blacklisting Government contractors accused and/or convicted of violating the Wagner Act; and such as NLRB officials and employees lobbying for appropriations—with public money.

Sen. Wagner introduced a bill to supplement NLRB with a "mediation board" similar to the Conciliation Service of the Labor Department, which has a 25-year record of success. Friends of the Service are mad as hops about the proposed intrusion. Anyway, Wagner's bill is regarded as a tin duck to distract attention of irate employers. Rep. Smith told TEXTILE WORLD he also is writing a mediation bill, unlike Wagner's. He may or may not be supported in it by other members.

Best hope of NLRB enemies, as this was written, was that Congress would take the advice of the Smith committee and repeal the clause creating the Board, thereby automatically ousting the three incumbents, and substitute another Board. The President would thereupon reappoint William Leiserson. Or, they hope that Mr. Roosevelt, who is reported somewhat disgusted himself, will ask Madden and Smith to pull their freight.

Wage-Hour Administration took the course anticipated in TEXTILE WORLD'S February letter. Administrator Fleming, confirmed by the Senate on Feb. 19, announced that rules and regulations would be reconsidered with intent of meeting, insofar as possible, the demands of those who seek amendment to the law, rather than submit the issue to Congress. Probably some exemption for agricultural processors, can be achieved by re-definitions. Probably protection for employers against liability, and hours exemption for salaried workers cannot be handled administratively. Fleming will advise on amendments, but he will propose none.

The Administrator issued a warning, following a court decision in favor of a group of railroad track workers, that employees' suits "may be a major factor in enforcement of the . . . Act."

Apprentice regulations have been amended so that employers, before making application for certificate, must obtain approval of the agreement under which the apprentice is employed, by the State apprenticeship council, or corresponding authority, approved by the Federal Committee on Apprenticeship.

Briefs were received on review of the Division's order on textile learners till March 8. Hearing records on wage recommendations of both knitted underwear and outerwear committes are being studied; the Administrator's wage orders are pending. Briefs on review of the Division's order regarding learners in knitted wear (except hosiery) are being studied and the Administrator's decision is pending. Oral hearing on wool-textile recommendation is set for Apr. 1.

Cotton stamp plan is expected to be operating on an experimental basis in a few days. Surplus Commodities Corp. is studying its food stamp experience, sizing up towns of various sizes and location for trials. Regular funds are being used; no appropriation necessary. This distribution to needy will include many cotton garments and household goods. The plan might be important in the relief system.

Reciprocal trade agreement program, approved by the House for another three years beginning June 12, seems certain of passage in the Senate. Republicans charged that increased U. S. exports are "death dealing munitions"—not the result of the Hull policy. Even the Administration feared a close call, but a wide front of compromises on details to please manufacturer opponents, silenced many of their representatives in Congress. "Trader Hull" and his friends figure the "most favored nation" system will be a good thing for this country in world trade recovery after the present war. Attempts to make the "treaties" subject to Senate ratification seem headed for failure.

Freight rates on all-rayon and rayon-and-cotton mixed unfinished piece goods were reduced as of Feb. 10 by action of the Interstate Commerce Commission. The rates apply to goods originating at points of production in the South with destinations at eastern finishing points. The reduction applies also to rail-and-water shipments, as well as all-rail. The lower rates mean a reduction of about 40% and some of the goods will move at about the same rates as current on cotton piece goods. As an example of the change the old all-rail rate on unfinished all-rayon piece goods from Greenville, S. C., to Saylesville, R. I., was $2.06 per hundred lb. The new rate is $1.24.

An inquiry by a special Federal Grand Jury, instigated by the anti-trust division of the Department of Justice, begins April 2 in New York, covering merchandising practices in the floor covering industry. Subpoenas were served on 21 rug and carpet manufacturers as well as on Herbert Gutterson, president of the Institute of Carpet Manufacturers. The subpoenas require witnesses to bring documents relating to "agreements, understandings or interpretations" on prices together with records of sales, etc., for the last six years.

New Sheeting Finish

With alkali-soluble cellulose ethers is permanent after repeated launderings

By MARK A. GOLRICK, Jr.
Dutchess Bleachery, Inc.

IN LINE with the trend toward production of better and more durable finishes for cotton fabrics, Deering, Milliken & Co. and its finishing plant, Dutchess Bleachery, Inc., decided to investigate the possibilities of developing a new finish for sheetings. Following a survey to determine just what qualities are most wanted in sheets, specifications were drawn up, and experimental work was started on development of a finish which would give the desired characteristics. As the result of numerous plant trials and laboratory and consumer tests, the durable, linen-like finishes obtained by application of alkali-soluble cellulose ethers were selected as the most suitable. Further plant trials led to the development of an improved range method for applying the finishing material, and commercial production was started.

Sheets to which the new finish has been applied are now being sold under the trade name "Sylvan Permanent Finish Sheets." In promoting these sheets, Deering, Milliken & Co. are stressing seven points of superiority.

These points are: luxurious appearance, increased wear, retention of crispness and firmness after repeated washings, reduced tendency toward shrinkage, absence of linting, elimination of need for starching after laundering, and elimination of loss of weight in laundering. To back these claims, the company has had extensive tests made by independent laboratories. The permanence of the finish is indicated by one such test, which showed that during washing three competitive brands of sheets lost 5.38%, 6.70% and 3.67% in weight, respectively, while the Sylvan Sheet lost only 0.97%.

APPLICATION of cellulose ethers to cotton fabrics consists essentially of padding the cloth with an alkaline solution of the ether followed by partial drying, neutralization of the caustic with acid, or treatment with boiling water, concentrated solutions of salts, or ammonium hydroxide to coagulate the ether and convert it into its insoluble form. The particular compound used at Dutchess is a hydroxy ethyl ether of cellulose soluble in caustic soda; it is known as Ceglin and is manufactured by Sylvanic Industrial Corp.

The solutions are prepared by first soaking the dry ether—which resembles cotton linters or wood pulp in appearance—in water to swell it and soften any lumps in the material. The required amount of caustic soda previously dissolved as a 50% solution is then stirred into the wet material, which gives a translucent mass. Solution is not obtained until the mixture is cooled to approximately 0° C., either by addition of cracked ice or by circulating brine in cooling coils. Once prepared, the solution may be warmed to room temperature or even higher without destroying the solution.

The concentration of Ceglin used depends on the finish desired and for sheets varies between 4 to 4½%. The solution at this concentration is slightly viscous and practically water white and clear, and, if stored in a cool place, is stable for a month or so. When first prepared, the cool liquid is two to three times as viscous as it is after warming to room temperature. If used immediately after preparation, the solution will give a different finish than if allowed to warm to room temperature.

At Dutchess the solution is made in 200-gal. mixes, since most of the units were already available and could be converted to this use at relatively small cost by appropriate piping and other slight changes. For example, a copper mixer and five 150-gal. wooden tubs previously used for preparation of starch mixes were available for wetting out the Ceglin with water, the caustic solution is prepared and stored in existing mercerizing equipment, and removal of the wooden lining from

INTRODUCING
the Sylvan
Permanent Finish SHEET
AMERICAN INSTITUTE OF LAUNDERING
STORE NAME
t Finish SHEETS
this beautiful sheet possible is tub-fast and will not come out in the wash.
The Sylvan Sheet with the Permanent Tub-Fast Finish has been awarded the official "Tested-and-Approved" Seal of the American Institute of Laundering.
$0.00
Phone
TODAY FOR A DOZEN OF THESE NEW SYLVAN PERMANENT FINISH SHEETS
LOOK BETTER · FEEL BETTER · WEAR LONGER

Fig. 1. One type of promotional material for Sylvan sheets with new permanent finish furnished by Deering, Milliken to retailers

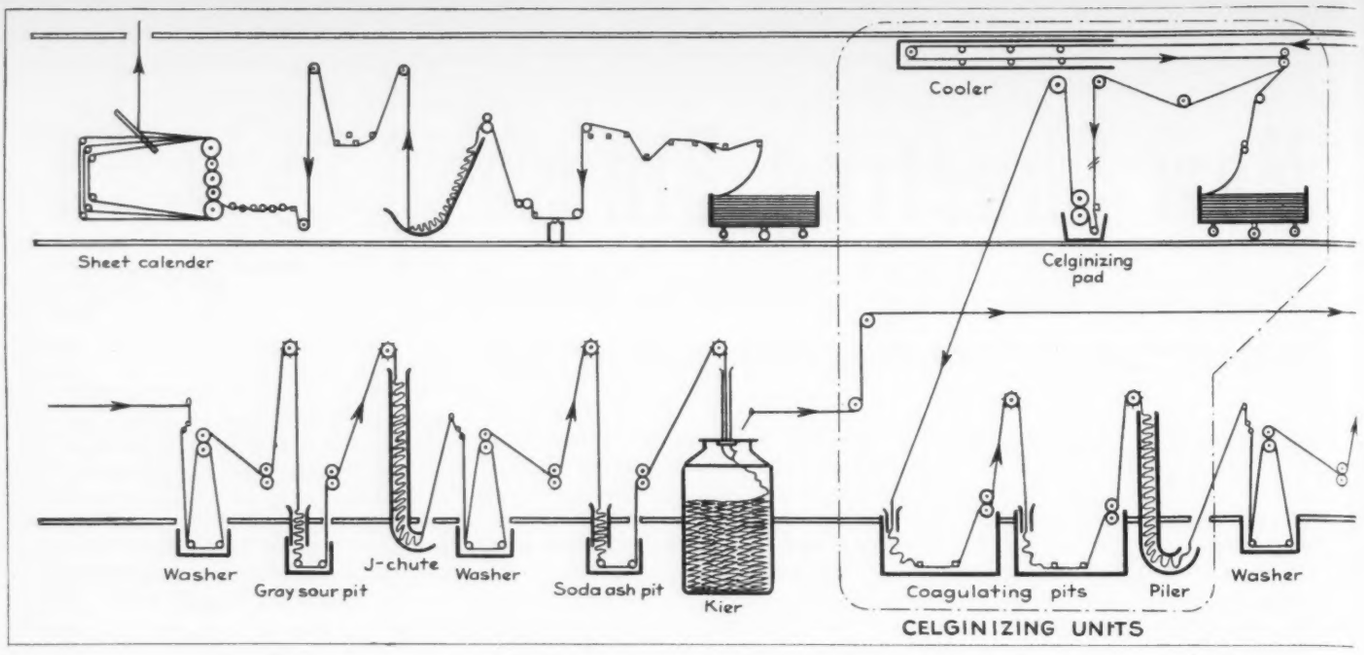


Fig. 3. Schematic diagram of finishing range for wide sheetings; units involved in application of Ceglin solution and subsequent coagulation are indicated; note from text that cloth passes twice over certain units of the regular range, indicated by double arrows

two 250-gal. iron mixers made them suitable for mixing Ceglin and caustic.

The flow chart (Fig. 2) shows the method of preparation. The caustic soda is dissolved as a 50% solution in the usual caustic dissolver, *A* of the mercerizing range and pumped to a storage tank, *B*, where it is allowed to cool to room temperature. After cooling, enough for one mix is pumped into a small measuring tank, *H*, elevated slightly above the mixer. This tank holds 1 gal. per inch of depth and is fitted with a valve on the bottom for discharging slowly into the mixer. The dry Ceglin is wet out in the copper mixing kettle, *D*, and pumped to the wooden storage tubs, *F*. Each of these tubs holds the wet Ceglin for one mix until pumped into the solution mixer, *G*. The wet mash is pumped into the iron mixer, *G*, and then the required caustic soda solution is run in from the measuring tank, *H*, while the mix is being stirred. The causticized Ceglin fibers swell and become translucent, and a little heat is generated. The causticized-Ceglin mash is pumped to the elevated 1,200-gal. iron tank, *J*, where it is allowed to cool to room temperature overnight. The mix is then allowed to flow into the second iron mixer, *I*, where the required amount of finely cracked ice is added, while stirring. In a short time, the temperature is reduced to 0° C., and the Ceglin goes into solution. The solution is then pumped to an elevated 1,200-gal. storage tank, *K*, where it is warmed to room temperature for use in the mangle, *L*. Warming is not essential, as the solution can be used cold.

THE FORMULA USED for preparation of 2,000 lb. of a 4½% Ceglin, 8% caustic mix is: 90 lb. Ceglin pulp (dry), 320 lb. 50% caustic solution, 600 lb. crushed ice, and 900 lb. water. The 600 lb. of ice is for warm-weather use. As the weather grows colder and the temperature of the feed water drops, the amount of ice may gradually be reduced to 500 lb. and additional water used to maintain the mix at 2,000 lb.

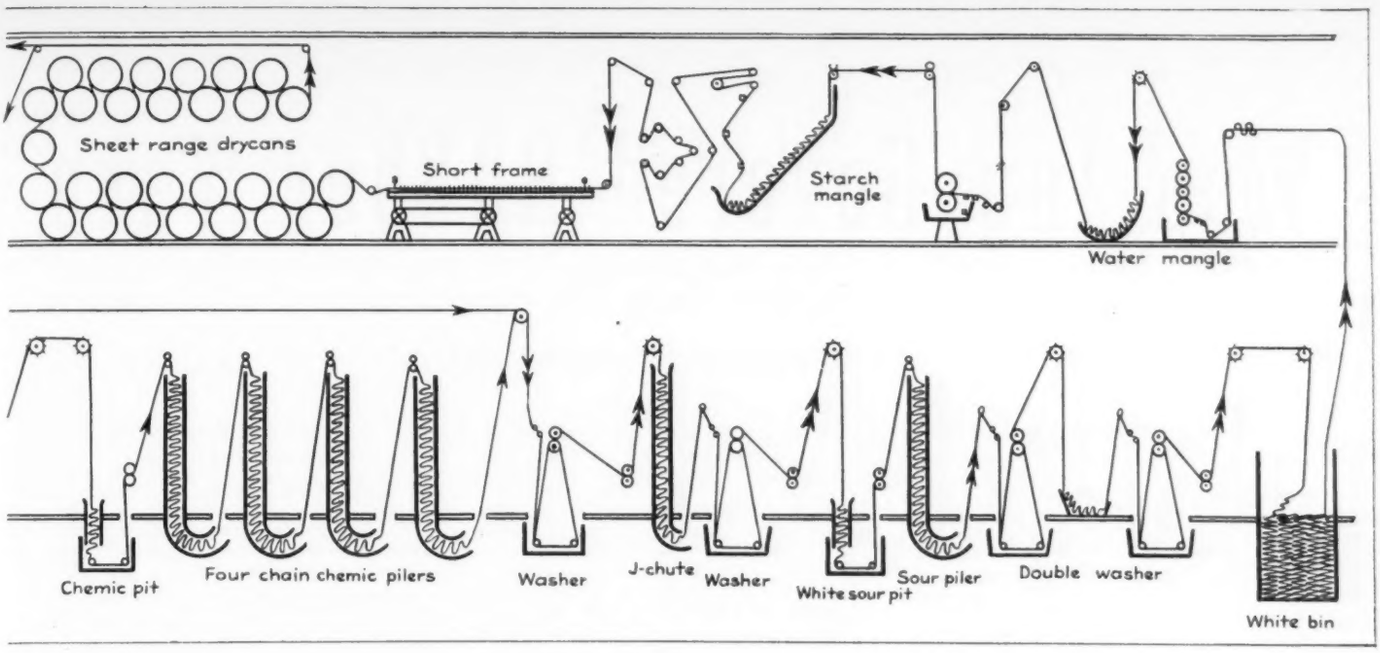
During the earlier development of this finish at Dutchess, it was thought that the semi-drying method of coagulation might give the most convenient and satisfactory operation, since the cans were in range with the mangle on which the solution is applied and minimum mechanical changes would be required. Following semi-drying on cans to remove approximately one-half the water, the cloth was plaited into boxes and taken to the bleach house, where it was run into boiling water in a slack washer, given a cold wash, soured in the regular sour pit to remove traces of alkali, bleached in the usual manner, and washed through two white washers to the white bin. From this, the cloth was finished on the sheeting range in the usual manner, except for the omission of the usual starch mix.

The ready acceptance accorded to Sylvan Sheets to which the new finish had been applied and the excellent reports received from testing laboratories justified further work on development of a more efficient method.

THE PRESENT METHOD is outlined below and illustrated in the schematic diagram of the sheeting range (Fig. 3). Note that the units involved in the application of the Ceglin solution and subsequent coagulation are inclosed in dot-dash lines. The cloth after kier boiling, passes through a washer, sour pit, sour piler, and double washer into a white bin. From the white bin it follows the usual route through the water mangle (actually on same floor as white bin) and over the dry cans to the Celginizing pad. Here the cloth is impregnated with the Ceglin solution, passed through a roller pot eye and down through the floor to the coagulating pits, where it is treated with 5% sulphuric acid. Next the cloth goes to a piler for 5 min. and then rejoins the regular bleaching range at the washer preceding the chemic pit. The cloth passes through this washer, the chemic pit, chemic pilers, washers, sour pit, etc., eventually coming off the dry cans ready for calendering and doubling.

This acid-coagulating method is not only more economical of time than was the one originally employed, but also gives a more uniform finish. Making the process more nearly continuous has brought the operating cost to a reasonable figure.

During the development of the process a number of facts were disclosed which may be of interest to other finishers who contemplate the use of alkali-soluble cellulose ethers. In the first place, it was found that while the Ceglin solution can be applied to cotton fabrics on the usual types of equipment, some modifications are usually necessary. Because of the caustic soda content of the solution, the presence of brass, bronze, copper, tin, or zinc must be guarded against. For example, any brass guide rolls must be replaced, or covered with several layers of cloth lapping. Monel metal or stainless steel are satisfactory, and iron can be used if care is taken to prevent the equipment from rusting when not in use. The mangle used at first was the regu-



lar bronze-and-rubber, two-roll combination. This was satisfactory, except when it was necessary to stop the machine. At this point, the film surface exposed to the air would absorb copper and coagulate. This condition was temporarily compensated for by running in an end cloth and removing the film. Later substitution of a steel shell roll corrected this entirely.

Solutions are much more easy to apply at room temperature than when cold. When the solution is cold and viscous, there must be decidedly more set on the mangle to prevent excessive carry-over of the solution and consequent quick contamination of the coagulating bath.

Semi-drying on the sheet range at Dutchess involved the use of copper cans. Since copper affects the Ceglin solution adversely, the first four cans were lapped with a few layers of sheeting. Lapping the cans not only protected the padded cloth from the action of the copper, but allowed the cloth to be heated gradually. This, in turn, prevented surface coagulation with its danger of scale formation. The rest of the cans needed no lapping. It was found by trial that about one-half the usual number of cans was satisfactory. Care in operation is necessary, however, so that the cloth is not permitted to stand on the heated cans in case of a shut down. This would result in overheating the cloth, and, if continued long enough, the cloth would first dry out, then turn yellow, become brittle, and fall apart.

Water can be added to dilute Ceglin solutions if stirred in as a thin stream, but the amount added should not reduce the total caustic content below 5% unless the solution is to be used immediately. Care should be taken in diluting the solution that the water is not added all at once; otherwise, coagulation may occur by local dilution below the caustic concentration for Ceglin solution. It is well, therefore, when washing equipment or flushing pipe lines, to rinse with 5% caustic solution before finally washing the equipment with water.

Being inert to kier boiling, Ceglin can be applied to gray goods if this is desirable because of operating advantages. However, at Dutchess it is applied after kier boiling, but before chemicking. This was found advantageous in obtaining a finish with the soft characteristics desired. When the solutions are applied to bleached goods, the adhesions between the fibers are not broken down completely in the subsequent handling, resulting in a somewhat firmer hand than desired.

Selection of the method of coagulation depends not only on the results desired, but also on the equipment available. Hot water produces a much softer finish than either semi-drying or acid coagulation. Semi-drying gives the most open appearance to the cloth and the most linen-like effect to the yarns. Acid coagulation gives effects somewhat similar to semi-drying, although the yarns are not quite so sheer. In semi-drying, excessive temperatures and removal of too much moisture must be avoided. If over-heated, the cloth may be damaged; if allowed to become too dry, it becomes too stiff for handling in rope form.

In finishing some types of fabrics with Ceglin, additions of mineral or cellulose fillers may be made either for padding or backfilling. The ether will bind a maximum of 200% of talc or 400% of clay on the weight of the ether, with reasonably good fastness to repeated laundering. When mineral filling is not permitted, 100% of 200-mesh bleached cellulose on the weight of the ether may sometimes be used. Softeners and wetting agents may also be added to the solution to modify the hand, although the former if needed, may be used to better advantage just before final drying.

Use of alkali-cellulose ethers at Duchess Bleachery has been confined largely to the finishing of sheetings. However, due to the excellence and permanence of the effects obtained, together with the ease and comparatively low cost of application, it appears probable that they will be found of value in finishing various other fabrics.

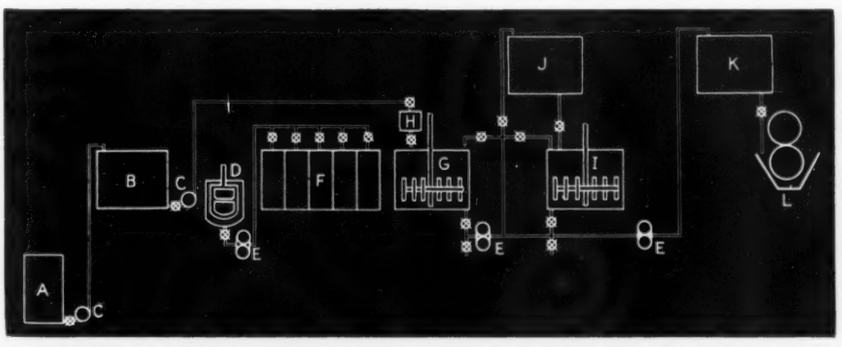


Fig. 2. Ceglin solutions preparation—*A*, caustic dissolver; *B*, caustic storage tank; *C*, rotary pump; *D*, mixer; *E*, gear pump; *F*, storage tank; *G*, mixer; *H*, caustic-measuring device; *I*, mixer; *J*, *K*, storage tanks; *L*, mangle

Weaving Covered-Rubber Yarn

Routine tests for maximum stretch warn overseer when to make tension change

By CHARLES E. BERGAMINI

THOROUGH TESTS of covered-rubber yarns followed by a simple routine check of each lot before winding yield information which is of great value to weavers. Test methods are gradually being standardized, and some of the leading mills have adopted a series of sixteen tests, while others are using a series of eight tests. Once a given yarn has been subjected to one of these complete series of tests and the correct shuttle tension for it established, a routine daily test is made before winding of each lot to determine maximum stretch. If this test shows any marked deviation from standard, the weaver is so advised in order that he can make the necessary change in tension.

At least five skeins, comprising a representative sample of each lot, are required for the tests. Conditioning of the yarn prior to testing is preferable, but not essential. In order to expedite tests, use of a measured yard marked off on the testing table is advisable. A description of the test methods follows:

YARDS PER POUND—A 2-yd. length of relaxed yarn is taken from each skein and weighed on an analytical balance.

MAXIMUM STRETCH—Using the marked-off yard on the testing table, 10-in. lengths grasped tightly between each thumb and forefinger are stretched to the limit. The maximum stretch is recorded in per cent. This method is subject to error, due to the human equation, and, therefore, requires considerable care and practice. Use of the measured yards from the first test is recommended.

TURNS PER INCH—A 5-in. length from each skein is marked off in ink. To increase the ease of unwrapping, the yarns should be stretched about 50% during the process. Direction of turns should be noted; directions of inner and outer wrappings are invariably reversed. Note: Specially designed instruments for determining turns of covering are now available.

LENGTH OF WRAPPINGS PER INCH—The distance between ink marks on the unwrapped yarn from the previous test is carefully measured, divided by five, and an average obtained. These wrappings must be reserved for other tests.

YARN AND RUBBER DIAMETERS—Diameters or cross-sectional dimensions are obtained by means of a graduated microscope or a suitable thickness gage and are recorded in thousands of an inch.

RUBBER LENGTH PER INCH—The ink-marked rubber lengths from the turns-per-inch test are measured, divided by five, and an average taken.

COUNTS OF WRAPPINGS—All the ink-marked outer wrappings reserved from other tests are carefully cut so that only the actual length from mark to mark remains. These are weighed collectively on an analytical balance, and, from the combined lengths, the counts are calculated. The same procedure is followed in the case of the inner wrappings.

PER CENT OF RUBBER AND COVERING YARNS—The marked rubber lengths are cut as in the case of the wrappings, and the combined wrappings and rubber lengths are weighed. Since the weights of the wrappings alone are known, the percentage may be calculated. Per cent rubber is obtained by subtraction.

HYSTERESIS CURVE—By subjecting a 10-in. length of yarn to a gradual loading sufficient to approach its maximum stretch (100-gram total load is adequate for most yarns) and recording the percentage of stretch at various intervals, a curve may be drawn which shows the resistance to stretch of the yarn. A curve of a similar nature is obtained with a gradual unloading. The comeback ability of the yarn is indicated by the lag or area between curves.

PERMANENT SET—The percentage of stretch retained by the yarn after unloading is complete is taken as the permanent set.

BREAKING POINT—The yarn is extended, as in the maximum stretch determination, and the breaking point is recorded in per cent. Or, the yarn may be subjected to a gradual load as in the hysteresis procedure, and the number of grams required for breaking, as well as the percentage of stretch, recorded.

As a check on, or substitute for, this complete series of tests an alternative method may be used. The procedure is as follows:

YARDS PER POUND—Same as above.

MAXIMUM STRETCH—Same as above.

YARN AND RUBBER DIAMETERS—Same as above.

RESISTANCE TO STRETCH—A single end from each of five skeins is stretched gently in the hand several times; this serves to break individual fibers of the covering yarns which might cling tenaciously and thus contribute materially to the stretch-resisting properties of the yarn. Next 10-in. lengths are marked off and subjected to a weight of 5 grams, which corresponds to a very low shuttle tension. The percentage of stretch under this tension is taken as the resistance to stretch or comeback of the yarn. In the case of heavy yarns which are not stretched at least 1% under this strain, a 50-gram weight, corresponding to a very high shuttle tension, is employed.

RUBBER LENGTH AND YARN COUNTS—A section of yarn exactly 3 in. long is taken from each skein. This is easily unwrapped in the hand, and the rubber length measured. After measuring and weighing the wrappings, their counts are determined in the usual manner.

AVOIDANCE of unnecessary time-consuming tests in routine daily work is naturally desirable. Although it is resistance to stretch, and not extent of stretch, which governs shuttle tension, since one is indicative of the other, the latter property may be advantageously determined in lieu of the former. Once complete tests have been made and weaving methods established for each yarn, routine daily tests on maximum stretch may be turned over to a trained girl, who will check each lot before winding.

Laid-in widths (lengths of relaxed yarn per width of cloth) usually are obtained by tediously adjusting the tension on each shuttle until extracted picks show the desired length. This procedure is repeated as often as the style of fabric or type of yarn on each loom is changed. This method tends to be as inaccurate as it is time-consuming.

If, for each laid-in-width of a yarn, the tension on a perfect-weaving shuttle is converted to grams by means of a tensometer and cotton yarn, and properly recorded in chart form, subsequent repeats on any style of fabric involving this yarn may be made easily by consulting this chart. Thereafter no covered-rubber yarn whatever is involved in the adjusting of shuttle tension; instead, cotton or other rigid yarns are employed in the usual fashion. With this procedure, lengthy trial-and-error methods for obtaining proper shuttle tension need only be practiced once per laid-in width per yarn.

Spreading Knitted Fabrics

Variables must be considered when calculating correct cloth widths

By F. J. QUILLITZSCH

A SERIES of useful tables designed to aid the knitter in determining the correct cloth width to which plain 1×1 rib underwear fabrics should be spread to minimize shrinkage was presented by the writer in the November, 1939, issue of TEXTILE WORLD. Subsequently the question was raised as to whether or not these particular tables can be used for determining the spreader sizes for Swiss-rib, flat-knit, tuck-stitch, and other types of knitted fabrics, as well as the plain 1×1 rib. The answer is that the tables given in the November issue are suitable only for the plain 1×1 rib. There are a number of variables to be considered in figuring the correct width of each style of fabric, and a brief discussion of some of these may be of interest.

In Figs. 1 and 2 are illustrated two tuck-stitch styles. It will be noted that the fabric shown in Fig. 1 has every third needle out, while that shown in Fig. 2 has only a few needles out to give a panel effect. If both styles are made with the same size of yarn and the same number of tuck feeds, the style with more needles out will finish narrower than the other. It is apparent then that a standard width for each machine size cannot be figured for all tuck-stitch fabrics. Rather, each style should be figured differently, according to the number of needles out, the number of tuck feeds, and the size of yarn used. It should be noted also that the plain part of the garment for the waist should not be spread so wide as is the tuck part. Again, many tuck-stitch garments are knit to shape, and should not be spread.

TWO SWISS-RIB FABRICS are illustrated in Figs. 3 and 4. As every third needle is out in Swiss-rib fabrics, naturally the fabric will be narrower than plain-rib cloth made on the same size of machine. However, not all Swiss-rib fabrics are the same. On some machines the fabric is so knit that there is quite a space between the wales made by the cylinder needles. The fabric shown in Fig. 3 is typical. On other machines the fabric is so knit that the space between the wales is not very noticeable. The fabric shown in Fig. 4 is an example of this type. Accordingly, in figuring the correct width to which to spread Swiss-fabrics without distorting the stitch, one must also consider the cam motion of the machine.

A flat-knitting machine of the same cut as a rib-body machine will use a much heavier yarn. Therefore the same tables cannot be used for both machines. However, as each needle knits a wale the width of which is four times the diameter of the yarn, the width of the fabric will be four times the diameter of the yarn multiplied by one-half the number of needles.

It should be emphasized that a good deal of the shrinkage in knitted underwear is due to improper spreading. Knitters should, therefore, determine the correct width to which each type and style of fabric should be spread to give the maximum shrinkage, and then spread the fabric to that width.

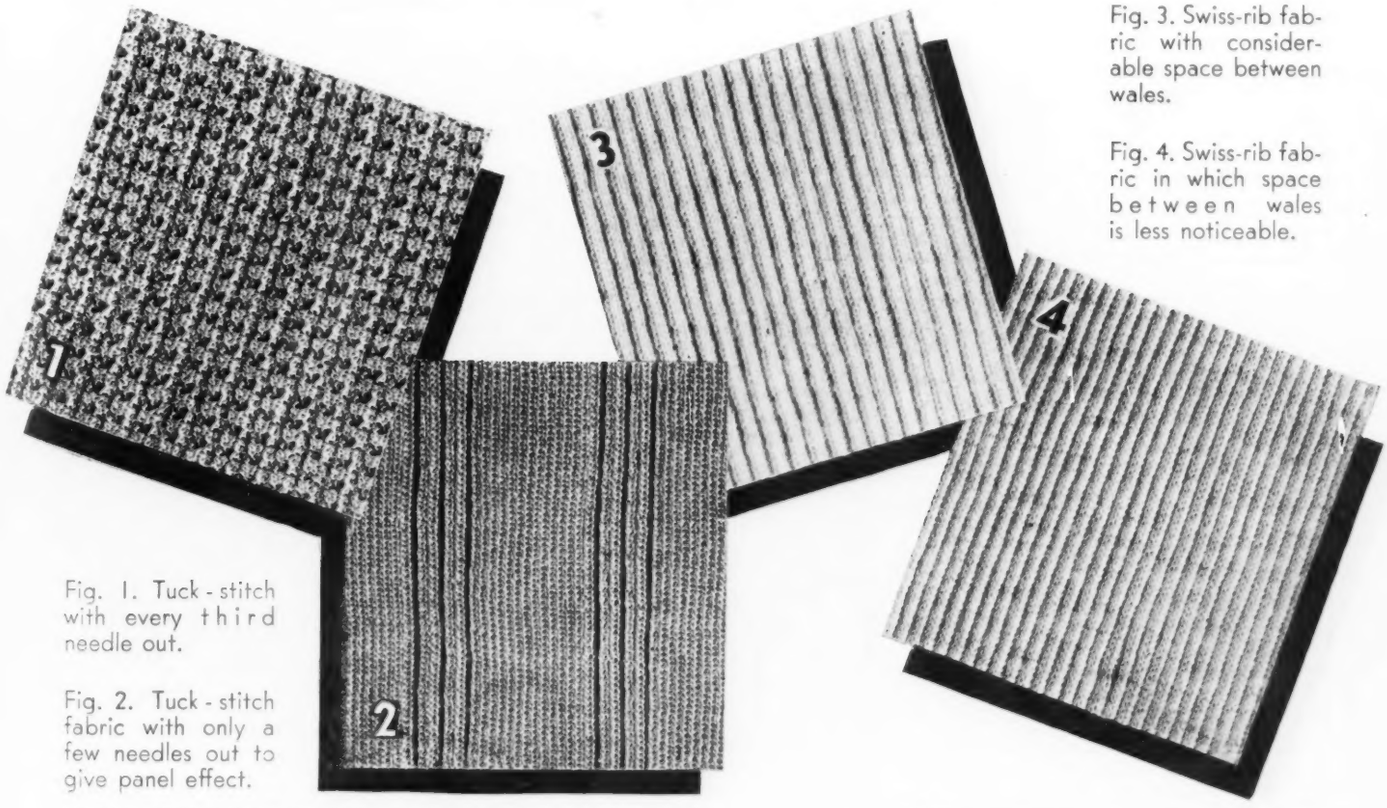


Fig. 1. Tuck-stitch with every third needle out.

Fig. 2. Tuck-stitch fabric with only a few needles out to give panel effect.

Fig. 3. Swiss-rib fabric with considerable space between wales.

Fig. 4. Swiss-rib fabric in which space between wales is less noticeable.

Streamlining the Mill

Step-by-step American Spinning Co. has restored plant to high efficiency

A PLANNED PROGRAM for the American Spinning Division of Florence Mills, Greenville, S. C., has increased production 10%, improved quality of products, reduced seconds, and raised the standard of working and living conditions for the employees. This has been done with practically no increase in number of units of productive equipment. Although only two of the three proposed steps have been completed to date, savings effected are so substantial that the work is expected to pay for itself within four years. All building and machinery changes so far have been made without interrupting operation of the mill.

J. E. Sirrine & Co., Greenville, engineers, who have handled the job from the beginning, estimated originally that the first two steps would cost $640,000. Actual expenditure amounted to $637,000. This not only was less than the estimate, but also included a number of features originally planned for the third step. Furthermore, it should be emphasized, increased production and decreased costs resulting from the modernization have been even better than Sirrine's original estimate.

Modernization of American Spinning Co. began in 1935 when Allen Johnson became president of Florence Mills. He called immediately for a thorough study of the properties, which were run down at the time, and soon began such changes as were necessary.

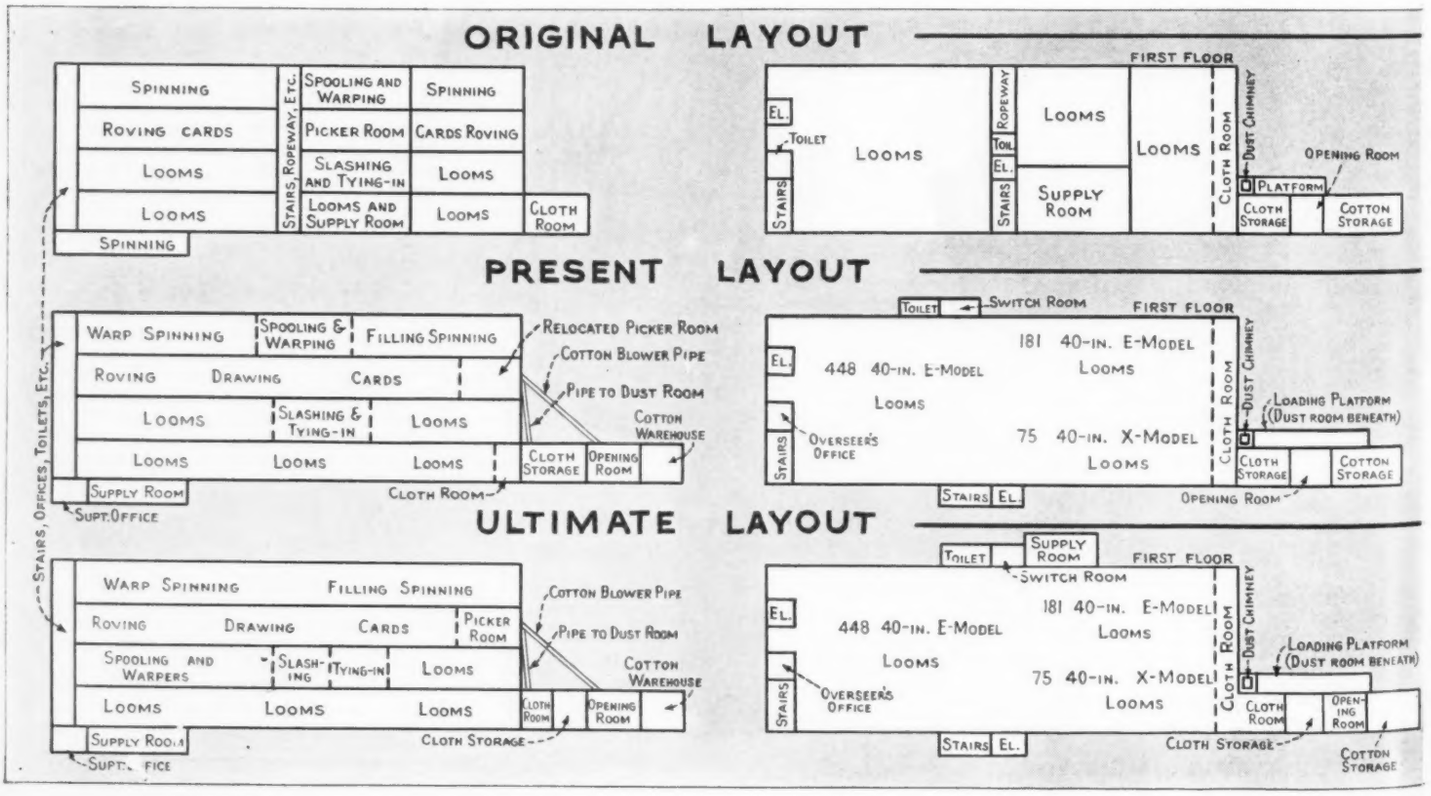
THE FIRST STEP began with enlarging and modernizing the opening room. This room has two complete lines of opening and cleaning equipment. Each line contains three feeders, a No. 4 bale braker with an 18-ft. extended apron, a vertical opener, a No. 12 lattice opener with screens, and Centrif-Air cleaners. All this equipment was built by Saco-Lowell Shops, except the Centrif-Air cleaner. Equipment added at the time included one bale braker, one Centrif-Air cleaner, and two screen sections. The opening room also contains a roving-waste machine, a thread extractor, and a waste feeder, which were in use prior to the beginning of the modernization program.

Cotton is blown to the picker room, located on the third floor, through a conventional condenser and fan, and is fed to the pickers by a rake-type Saco-Lowell distributor. The picker room now contains five one-process Saco-Lowell pickers, three of them with controlled feed and intermediate feeders. The other two have primary feeders without the intermediate feeders. When modernization work began, the old three-process pickers already had been replaced with single-process Saco-Lowell machines, but these machines were relocated and brought up to date with the latest feeding devices. One additional picker was installed.

The conventional dust room was eliminated through use of two return-air condensers built by Whitin Machine Works under Knowlton & Newton patents. Dust pipes from the picker room go through the floor to the ceiling of the room below and return to the condensers in the picker room. This enables the mill to maintain the correct humidity in the picker room. Also, in winter months the room is comfortably warm, since no heat is wasted by air exhaustion.

There are 145 cards now in use at American Spinning Co., including some moved from the old yarn mill, which

Fig. 1. Layout of equipment at American Spinning Co. is being modernized in three planned steps; with two steps completed, the plant is now operating at high efficiency; diagram is schematic and does not show true dimensions of the various departments



has been idle for several years. These additional cards permit the mill to reduce production per card and improve quality of sliver. The older machines were all reworked.

Old two-process drawing was replaced with new Whitin single-process drawing. There are 96 deliveries of this drawing in use, 1¼-in. diameter rolls, cork top rolls.

Old roving frames are still in use, but it is understood that these will eventually be modernized. They consist of eight 72-spindle, 12x6 slubbers; sixteen 92-spindle, 10x5 intermediates; and thirty-two 160-spindle, 8x3¾ roving frames.

A most important phase of this step of the streamlining program was installation of fifty-eight 300-spindle warp-spinning frames. These machines, supplied by Whitin Machine Works, are long draft, 3¼ gage, 1¾-in. rings, 7½-in. traverse, 10-in. ball-bearing cylinders, tape drive.

Old equipment in the spooling and warping department has been replaced with two 198-spindle Barber-Colman automatic spoolers and two Barber-Colman super-speed warpers. The spoolers are equipped with automatic cleaners, with Buffalo Forge Company fan. The air filters were built by Saco-Lowell.

THE SECOND STEP began with fifty-eight 312-spindle long-draft Whitin filling frames, 3-gage 1⅜-in. rings, 6¼-in. traverse, 10-in. cylinder with ball bearings, tape drive.

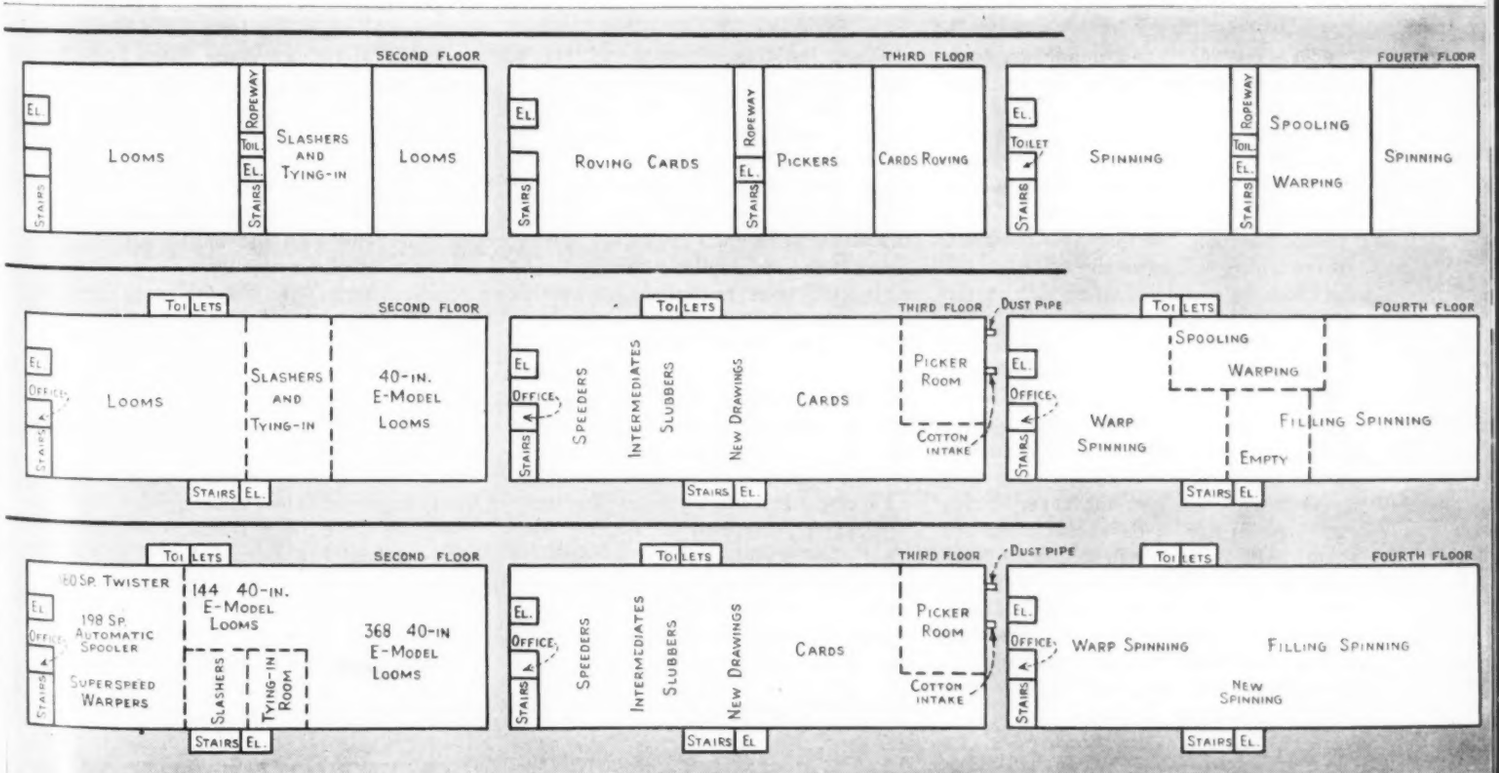
Photos by Coxe

Fig. 2. Three brick partitions and an old ropeway were removed from this room on the fourth floor and new spinning equipment was installed without interrupting operation; at the same time a complete new roof was added

All spinning frames, filling and warp, are driven by General Electric individual-drive motors, 10 hp., 1,800 r.p.m., mounted on Rockwood pivoted bases. Flat belts are used. All frames are cleaned by Parks-Cramer automatic cleaners of the bunchless type.

Four Saco-Lowell slashers equipped with Taylor automatic temperature and size-level controls, in use when the work began, were completely rebuilt. The slasher room was provided with a new ventilator system to introduce fresh air and remove surplus heat. Working conditions here have been greatly improved.

In the weave shed, 1,388 40-in. looms, including 75 X-Model Drapers already installed were retained, and are now being thoroughly overhauled. All worn bearings and parts are being replaced, and equipment providing for larger diameter warp beams and longer quills is being added. Thirty E-Model looms, located over present supply room, have been insulated with



Mitchell & Smith cork. This has reduced noise an estimated 50% in the supply room.

The streamlining program has been carried into the cloth room, where equipment is now being rearranged for straight-line production. Chief innovation is the addition of a conveyor belt back of the folding machines which runs the entire length of the cloth room. Folding machines are being lined up against the back wall, with tables 24 in. back of them. This arrangement makes it possible for an operative to move the cloth from the folding machine to the table in one step and with virtually one motion. The cut is then shifted with little effort to the conveyor. The conveyor, made of wide canvas on rollers, takes the cloth to an operative at the end of the line, who weighs it and stacks it on a truck, which takes it to the press.

Although he has not completed it, the master mechanic is working out a compressed-air lift for the Bushnell press which will raise the 600-lb. stack of cloth by means of a cradle (on the floor of the truck) and place it on the press more or less automatically. A small belt with hook will pull the cloth on the press floor and pull it off when the bale is tied. At the present time each cut of cloth is stacked on the press by hand.

Cooper-Hewitt mercury-vapor lamps are now in use in the cloth room, but these will be supplemented with General Electric fluorescent lamps in order to facilitate inspection and further reduce possibility of eye strain among employees. Other major equipment in the cloth room was built by Curtis & Marble Machine Works.

Eventually, if the present quarters become too cramped, the cloth room may be moved back into the building to the rear which formerly housed the opening room. Immediate results of revamping this department are expected to be a reduction in cost through faster operation and a lessening of the work load on individual employees by means of the handling devices.

THE THIRD STEP, which has not yet been carried out except for a few features moved up to the second step, is a projected relocation of more equipment and addition of spinning frames to balance loom production. This is indicated in the diagrams.

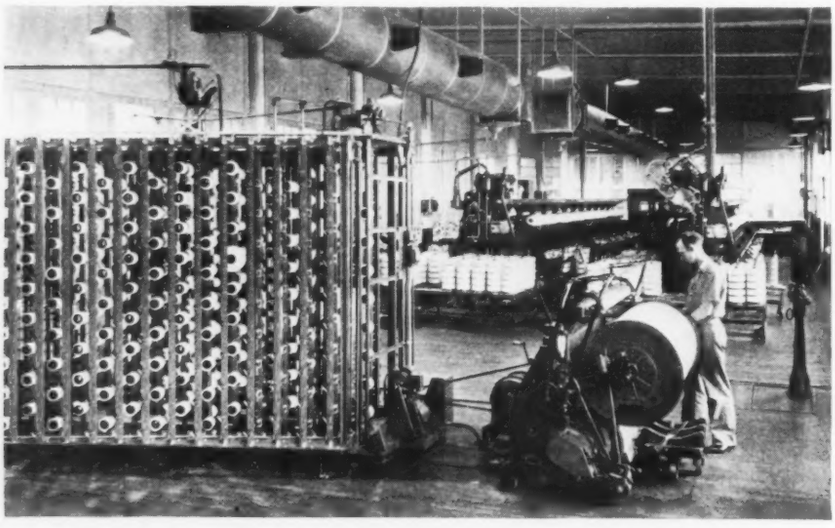


Fig. 3. New super-speed spooling and warping: note humidifier ducts and carefully spaced lighting

Basic building changes, a part of the first step, were carried out without interrupting regular mill operation. Several cross walls were removed in order to convert each floor into a single large room. The old picker room, in the middle of the third floor, was replaced with a new fireproof picker room at the end of the same floor. The entire mill was re-roofed. An outside stair and elevator tower was built to replace old inside facilities. A new toilet tower with modern plumbing fixtures, including drinking fountains and circulating ice water, was added for the comfort of the employees. Old wooden window sashes were replaced with new steel sashes.

Elevators, supplied by General Elevator Co., are high-speed, self-leveling machines with constant-pressure push-button controls. Doors are St. Louis bi-parting type, which open only when the elevator platform is in place, insuring safety for operators at all times. The old heating system was removed and a total of 65 new Thermolier heaters installed on all floors by Poe Hardware Co., Greenville, S. C. Work was carried out during winter months without interrupting mill operation.

The humidifying system was renovated. Old heads were reworked in some instances; new Bahnson heads were installed in the spinning room to meet modern conditions.

The mill was completely rewired for lighting, RLM reflectors with incandescent lamps correctly spaced to give practically uniform illumination were installed.

The new spinning frames were equipped with individual motors, and large motors in the card and weave rooms were replaced with small motors to reduce drives to smaller groups. The group-drive motors are all short-center drives, ceiling mounted on Rockwood pivoted bases.

A new remote-control switchboard was installed at the center of distribution with control-panel located in the machine shop for convenience in operation.

The switchboard, motors, and motor-starting switches were provided by General Electric Co.; and the wiring installation was made by Huntington & Guerry, Greenville, S. C.

SYSTEMATIC MAINTENANCE. All these changes of building, machinery, and equipment required considerable expenditure for new supplies, including roving cans, card-room bobbins, warp bobbins, filling quills, shuttles, etc. The supply room was moved and enlarged to permit proper segregation of machine parts. At present supplies are kept in what was formerly a small basement spinning room, but a new room will be built eventually.

An important feature of the present operation policy is a systematic machine inspection and maintenance program designed to keep all machines operating at the highest efficiency at all times and with the least effort on the part of the operatives.

Some time ago the village was painted, repaired, and put in first-class shape for the operatives, who are encouraged to beautify and improve their premises by putting out shrubbery and grass supplied by the American Spinning Garden Club at cost. Interior decoration of many of the houses has been improved also through the cooperation of Parker District officials, who sponsored a home beautification program as part of the regular Parker program.

American Spinning Co. today—through this planned three-step streamlining—is one of the lowest-cost plants in the print cloth group.

Quarterly Clearance Records

Help mills find losses, verify accuracy of fabric formulas, check inventories

By BERNARD HELLER

CLEARANCE RECORDS of stock and yarns on hand serve three important purposes in textile mills. They make it possible to determine the accuracy of theoretical fabric formulas used in calculating yarn requirements and cloth costs. They facilitate checking the correctness of inventories. And they bring to light any losses in stock and yarn due to waste or any other factor. The writer has found a three-month interval between clearances to be satisfactory; that is, the checks are made quarterly.

Of course, for these checks to be accurate and dependable, inventories taken must be complete, comprehensive, and correct. Every detail as to quantity, quality, size, and condition of material in process should be entered on inventory sheets in logical order. Then, with this as a basis, the clearance sheet can be prepared.

Fig. 1 shows such a sheet, as applied to the throwing department of a rayon mill. The form can also be adapted for use by spinning mills.

In the vertical columns on the right hand side of the form, the various lot numbers and types of stock on hand are listed, one to a column. Then, the data and calculations called for at the left-hand side are entered. The first figure for each lot indicates the pounds of the particular lot which were in process as of the close of the previous quarter. Under this is noted the pounds of that lot which were received and put in work during the current quarter. The third figure is the total of the first two. Under the total is noted the pounds of each lot which were redrawn during the period. Then the larger of the two figures is subtracted from the smaller. If the amount redrawn exceeds the total on hand, the difference is a plus (+) figure; when the reverse is the case, a minus sign (—) is inserted.

The amount of each lot in process as of the date of the clearance must also be taken into consideration. This figure is added to "plus" differences, and subtracted from "minus" differences, to give the net gain or loss on each lot during the period. Obviously, an exorbitant figure, in either direction, calls for investigation.

WEAVING MILLS can also make use of clearance records, as shown in Fig. 2. Although a rayon mill is used in this example, the method is equally applicable to cotton, wool, and silk weave sheds.

As before, a vertical column is provided for each type of yarn the mill is using. The first figure to be noted in each column is the yarn inventory as of the end of the previous quarter. To this is added purchases of yarn made during the three months under examination. The result is the total amount of yarn available for use during the period. From this total is subtracted the amount of each yarn on hand as of the end of the current quarter. The resulting figure indicates the pounds of yarn actually used during the period.

This figure is compared with the theoretical pounds used during the quarter, a figure obtained by multiplying the actual yardage of cloth produced by the calculated weight of material required to produce 1 yd. of cloth. This includes waste, stretch, take-up, shrinkage, and all other losses in processing. When fabrics contain two or more different yarns, a total poundage figure for each cloth style must first be calculated, and this then broken down to indicate the amount of each component yarn used.

Gain or loss on each yarn is determined by subtracting actual from theoretical pounds used, or vice versa, depending on which is larger. A minus (—) figure results when the actual pounds used exceeds the theoretical; a plus (+) figure when the opposite is the case.

As before, when either gain or loss is marked by more than normal size, careful investigation should be made to determine whether the difference is the result of inventory errors; excessive waste, whether legitimate or otherwise; or inaccuracies in the formulas used in calculating cloth costs and yarn requirements.

Quarterly Clearance
THROWING DEPARTMENT

Date 12/27/39	LOT NO. 219 TYPE — 100/40 Crepe	LOT NO. 238 TYPE — 100/40 Crepe	LOT NO. 237 TYPE — 100/60 Chalk	LOT NO. 245 TYPE — 200/75 Crepe	LOT NO. 252 TYPE — 150/40 Crepe
Yarns in process 9/26/39	1,667 lb.	2,222 lb.	3,220 lb.	—	—
Received (put in work) during quarter	7,480	3,091	27,720	29,460 lb.	1,760 lb.
TOTALS	9,147	5,313	30,940	29,460	1,760
Redrawn during quarter	9,269	4,802	27,427	29,061	1,752
Difference	+122	-511	-3,513	-419	-8
Yarns in process 12/27/39	—	408	3,103	374	—
Gain or loss	+122 lb.	-103 lb.	-410 lb.	- 45 lb.	-8

FIG. 1

Quarterly Clearance
WEAVING DEPARTMENT

Date 12/27/39	TYPE 100/40 Visc. Crt.	TYPE 150/40 Visc Brt.	TYPE 75/20 Saraceta	TYPE 120/32 Saraceta
Yarn inventory 9/26/39	24,657 lb.	5,012 lb.	2,399	1,216
Purchases during quarter	57,987	—	3,135	1,259
TOTALS	82,644	5,012	5,534	2,475
Inventory 12/27/39	30,026	4,778	2,925	1,252
Lb. used during quarter	52,618	234	2,609	1,223
Theoretical lb. used during quarter	52,324	234	2,598	1,225
Gain or loss	-294	—	-11	+2

FIG. 2

Knowledge of Dobby Designing

Will assist weavers and loomfixers to win promotion to better positions

By MARK P. FOX
Professor of Fabric Design
Alabama Polytechnic Institute

MANY TEXTILE SCHOOL graduates, weavers, and loomfixers have a fair knowledge of weaves and weave formation. But, there are comparatively few mill men capable of designing and planning a fabric and then fixing the loom to produce it. To give a clear idea of dobby designing to loomfixers and other weave-room men, this article outlines briefly the duties of a mill designer and the procedure for preparing a warp layout and drawing-in draft of a shirting fabric. A subsequent article will discuss the slasher layout and dobby-chain draft.

The duties of the mill designer vary in different organizations. In many cotton mills he receives from the selling agent a sketch or sample, or both, together with certain specifications of the fabric desired. From these data he makes all calculations and lays out the fabric. Then he has a sample of the goods woven, to be sent to the buyer for approval. The specifications often include several color combinations. When this is the case, a blanket sample is usually made containing all the various combinations. The designer's work consists of a careful study of the specifications as to width, construction, yarn numbers, contraction, colors, selvages, weaves, etc.; a determination of the total dents, dents in body warp, dents in selvages, warp layout, total repeats of pattern and dents over, drawing-in draft, total ends of each color, yards and pounds of each warp and filling yarn, heddle plan, pattern chain, warping orders, and slasher layout.

Fig. 1 represents a sketch of a shirting pattern with specifications as received from the selling agent, from which all plans and calculations for the production of this shirting will be made.

All calculations for a design from a sketch are based on the ground construction. With cloth of this construction having 120 ends per in., the ground warp should be reeded three ends per dent. Dividing ends per inch by ends per dent will give dents per inch—in this case 40. This is sometimes called the theoretical dents per inch. The entire width (38 in.) would contain 1,520 dents. There are 24 ends of selvage on each side. These are drawn-in two ends per heddle on the plain-weave harness, and reeded four ends per dent to give additional strength to this part of the cloth. This calls for six dents of selvage on each side, or twelve dents for both selvages. Subtracting this figure from the 1,520 total dents gives 1,508 dents in the body of the cloth.

A warp layout for one repeat of the color pattern is now required (Table I). This shows the number of reed dents and ends for each individual strips in one repeat, the total dents in one repeat, and the total ends of each count and color in one repeat. It is convenient to use a 6-in. steel rule graduated in hundredths of an inch to determine accurately the width of each of the stripes in the sketch. A 1-in. pick glass is useful in reading these minute divisions on the rule. In the sketch:

Ground stripe *A* measures 0.45 in.
0.45 x 40 dents per in. = 18 dents
Rayon stripes *B* and *C* each measure 0.05 in.
0.05 x 40 dents per in. = 2 dents
Novelty stripe *D* measures 0.025 in.
0.025 x 40 dents per in. = 1 dent
Ground stripes *E* measure 0.075 in.
0.075 x 40 dents per in. = 3 dents

The decorative stripes of rayon and novelty yarns are of different weaves from the ground and should stand out prominently. This is often accomplished by placing considerably more ends in the dents occupied by these stripes, and can be conveniently taken care of in the warp layout. In this particular fabric the yarns of the decorative stripes have a greater density because they are much coarser than those in the ground stripes, as can be seen in the warp layout.

The 1,508 dents in the body cloth divided by the 58 dents in one repeat gives 26 repeats with no dents over. On reference to the bottom of the warp layout it will be seen that 3,744 ends of 50/1 white body plus 48 ends of 50/1 white selvage gives a total of 3,792 ends of 50/1 white. There are 312 ends of 150-den. natural rayon, 312 ends of 150-den. green rayon, and 156 ends of 50/3 novelty yarn. This gives a total of 4,572 ends.

The next step is to construct a drawing-in draft (Fig. 2). This shows the

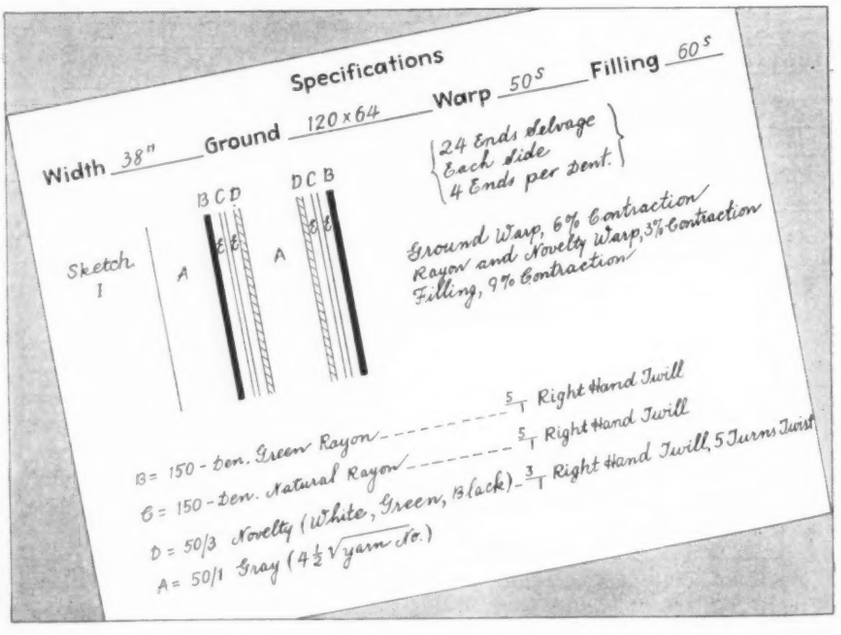

Specifications
Width 38"
Ground 120 x 64
Warp 50s
Filling 60s
24 Ends Selvage Each Side
4 Ends per Dent.
Sketch 1
B C D
D C B
A
A
Ground Warp, 6% Contraction
Rayon and Novelty Warp, 3% Contraction
Filling, 9% Contraction
B = 150 - den. Green Rayon ---------- 5/T Right Hand Twill
C = 150 - den. Natural Rayon ---------- 5/T Right Hand Twill
D = 50/3 Novelty (White, Green, Black) - 3/T Right Hand Twill, 5 Turns Twist
A = 50/1 Gray (4½ √ yarn No.)

Fig. 1. Sketch of rayon-stripe shirting with specifications for weaving

number of harnesses necessary for the various weaves in the pattern and the order in which the warp ends are to be drawn through these harnesses. It is not necessary to paint a design for such familiar weaves as those in this particular fabric. It is obvious that the $\frac{5}{1}$ twills and the $\frac{3}{1}$ twill shown in Fig. 1 will require six and four harnesses, respectively. Although the plain-weave ground repeats on two ends, it is necessary to use six harnesses for these ground ends. Otherwise, the large number of ends weaving plain would crowd the harnesses with heddles and thus cause trouble in weaving. For a pattern of this width it is practical to put as many as 800 heddles per harness or approximately 20 heddles for each inch of the cloth width.

The drawing-in draft is constructed by starting at the right and drawing the plain-weave stripe *A* shown in Fig. 1 on six harnesses straight draw, as shown in Fig. 2. It is common practice to paint-in the squares on the drawing-in draft from back to front and from right to left, where possible, as this is the order in which the drawing-in hands have found it most convenient to draw the warp ends through the harnesses. It is not a matter of importance which stripe or what part of the width of the design is first placed in the drawing-in draft, as long as a complete repeat of the pattern is represented. The start and stop points control this. The next stripe, *B*, as shown in the warp layout, contains two dents of 150-den. green rayon weaving $\frac{5}{1}$ twill. This is a weave composed of six warp ends weaving differently and therefore will require six additional harnesses—12, 11, 10, 9, 8, and 7 in regular order. Stripe *E* in Fig. 1 requires three dents of nine ends weaving plain, and is drawn on the plain-weave harnesses in Fig. 2. Stripe *C* requires two dents of six ends of 150-den. natural rayon, weaving $\frac{5}{1}$ twill and is drawn on the same harnesses as stripe *B*. The next stripe is another plain weave *E* and is drawn on the same harnesses as the previous stripe *E*. The novelty stripe *D* (Fig. 1) weaves $\frac{3}{1}$ twill but requires only three additional harnesses, since there are only three ends in the stripe, as shown in Fig. 2. Following another broad plain stripe *A*, there is a reversal of the order of the above stripes; the novelty stripe comes first and the green rayon stripe last, completing the repeat as shown in the drawing-in draft (Fig. 2).

It will be noticed that the required number of dents for each stripe shown in the warp layout (Table I) has been indicated directly under the drawing-in draft (Fig. 2). This plan is known as the reeding plan. Other items of information which every drawing-in draft should include are: start and stop points, reed number, reed spread or width, repeats and dents over, a legend of the symbols used, selvage information, and the total ends of each number and color of yarn used. Since there are no dents over it is not necessary to figure start and stop points on the drawing-in draft. In this case the pattern is balanced by taking a center point at the center dent of either of the broad plain stripes *A* in Fig. 1, which will be both the start and stop point. Close observation will show the same number of dents of plain ground next to each selvage.

If there had been sixteen dents over the total number of repeats, half of these dents would be counted to the right of the center point for a start point, the other half, or eight dents, would be counted to the left of the center point for a stop point. In this way the pattern would be balanced and each side next to the selvages would appear the same.

Since the width of the cloth in the reed controls almost entirely the width the cloth from the loom, the next step will be to determine this factor. According to the specifications (Fig. 1), the filling has a contraction of 9 per cent from the width in the reed to the width in the cloth. Therefore, the cloth width of 38 in. divided by 91 per cent gives a 41.75-in. reed spread.

It is also necessary to know the number of reed required for the fabric. There are several methods used to arrive at the approximate number of dents per inch that the reed must contain. However, since the theoretical total dents required for the entire width of the fabric is known, (1,520) this number divided by the width of the warp in the reed (41.75 in.) will give a close approximation of the number of dents per inch in the reed—in this case 36.5 dents per in.

With this method as a basis, combined with experience in this work, one should encounter little trouble in selecting the right reed for almost any fabric.

TABLE I Warp Layout

Dents	50/1 white	150-denier natural rayon	150-denier green rayon	50/3 novelty
18	54	..	..	..
2	..	..	6	..
3	9	..	..	..
2	..	6	..	..
3	9	..	..	..
1	..	..	..	3
18	54	..	..	..
1	..	..	..	3
3	9	..	..	..
2	..	6	..	..
3	9	..	..	..
2	..	..	6	..
Total for 1 repeat				
58	144	12	12	6
Total for 26 repeats				
1508	3744	312	312	156

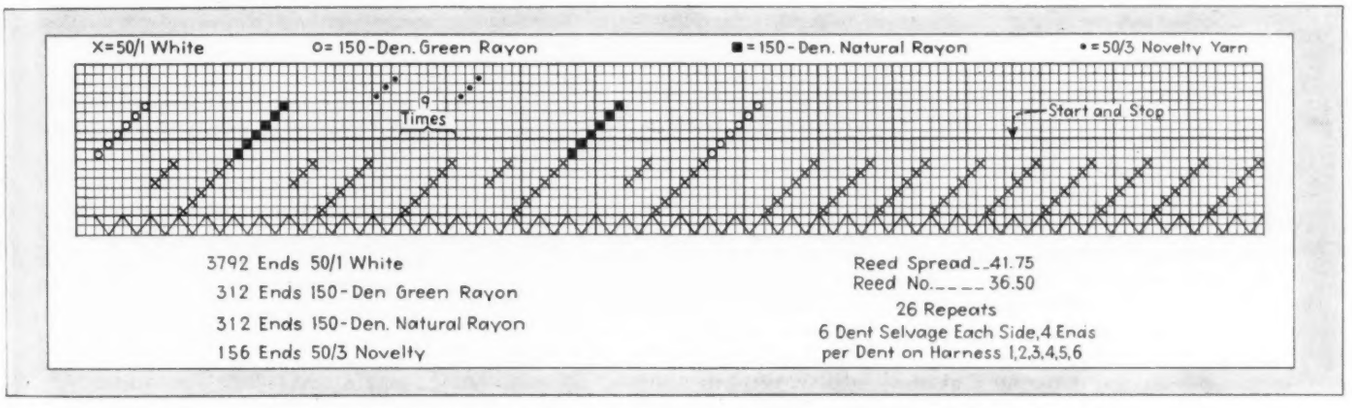


Fig. 2. Drawing-in draft and reeding plan for rayon-stripe shirting

Lining-Up Shafting

Simple devices made in mill shop aid accurate alignment of bearings

By CHARLES L. HUBBARD

MASTER MECHANICS and engineers in textile mills are well aware of the importance of having bearings for shafting in proper alignment. They are familiar with the quick and accurate method of aligning long lines of shafting by means of a surveyor's level and with the use of piano wire for lining up shorter lengths, such as are employed with group drives. It is believed, however, that they will be interested in the following description of some simple devices, for use with the piano-wire method, which do away with notes, computations, and corrections for variation in shaft diameter at different bearings. With these devices the shaft can be lined up in both vertical and horizontal planes with a single set-up of the equipment. The special devices can easily be constructed by any good mechanic from the description given and reference to the accompanying drawings.

The general set-up is shown in Fig. 1. The arms A_1 and A_2 are clamped to the shaft near the end bearings, and adjustments so made that the distance from the wire to the center of the shaft is the same at each end; also the wire is made to be in a vertical plane passing through the center of the shaft. Directions for making these, and other adjustments, are given later.

In general, the gage of the wire and maximum working length should be such that the required tension may be obtained by a weight of 20 to 30 lb., which can be easily handled.

In the drawing the wire is rigidly attached to arm A_1, then passed over guide B on Arm A_2, and is held taut by weight W. The wire must be of such length that it will pass outside the rims of the smaller pulleys and between the spokes of the larger ones, as indicated. In general, this will be around 12 to 15 in.

A detail of one of the arms (A_1 and A_2) is shown in Fig. 2. These may be made of bar steel and of the general construction shown. When there is considerable variation in the diameter of the shafting, it is well to have two pairs of arms—one with the clamp or yoke made to fit shafts varying from 1 to 2 in. in diameter, and the other pair for shafts 2½ to 4 in. in diameter.

Arms A_1 and A_2 are identical, but the devices for attaching the wire are different. That shown in position on the right arm in Fig. 2 is for the rigid attachment, also indicated at arm A_1 in Fig. 1. The end of the wire is annealed, wound around a short piece of ¼-in. rod, and soldered or brazed. In use, the wire is slipped in a slot between the arm and the clip or fastening device, and held in place by the short rod, as indicated. The distance between the wire and the center of the shaft is adjusted by loosening the setscrew D and sliding the clip up or down on the arm. Detail B is for the attachment of the wire at arm A_2 in Fig. 1, above the weight, and allows the wire to pass freely through a small slot, as shown. This device, like the other, is adjustable vertically on the arm.

IN SETTING UP THE WIRE, first clamp the arms A_1 and A_2 to the shaft at the end bearings (See Fig. 1) in approximately vertical position. Attach the wire at A_1, then pass it over the clip or fixture B, at arm A_2, and attach the weight, making the position of the wire approximately parallel with the shaft in a vertical plane. For adjusting the wire accurately below the center line of the shaft use the device shown in Fig. 3. This consists of a self-centering hook, to which is attached a small silk or linen cord and a weight. Place the hook over the shaft near arm A_1, loosen the clamp or yoke C (Fig. 2) slightly, and, by tapping the arm with a hammer, bring it to a position so that the wire just touches the cord, as shown in Fig. 3.

After a similar adjustment has been made at arm A_2, the wire will stand directly below the center of the shaft at each end. The next step is to make the final adjustment for bringing the wire into an accurate parallel position with reference to the center of the shaft, in a vertical plane. This is done by means of the device illustrated in Figs. 4 and 5.

This device consists of a wooden section similar to a ruler, with a metal V-caliper at the top. The V-caliper centers the left-hand edge of the ruler with the center of the shaft when pressed against the bottom of the latter and held in a vertical position.

Referring to Fig. 5, it will be seen that the point of tangency between the caliper and the shaft indicates the diameter of the latter, in inches, upon the scale. That shown in the drawing is 2 in.

In using this device, place the V-caliper against the underside of the shaft near the arm A_2, (the weighted end of the wire in Fig. 1) and bring it to a vertical position with the left-hand edge of the wooden ruler just touching the wire. Note the diameter of the shaft at the points of contact, loosen the thumbscrew E on the scale G, and move it up or down until the graduation on the latter, corresponding to this diameter, coincides with the center of the wire. Tighten the thumbscrew, thus clamping the scale rigidly in position.

This is the only adjustment of the device for the entire process of vertical alignment, regardless of the diameter of the shaft.

To make the wire parallel with the shaft, place the V-caliper against the lower side near the arm A_1 (Fig. 1), loosen the setscrew D on the anchor clip, and, by tapping with a hammer, raise or lower the end of the wire until it coincides with a point on the scale G corresponding to the shaft diameter indicated by the V-caliper. That is, the distance from the wire to the center of the shaft is now the same at each end of the line.

Next bring the end bearings to the same level by hanging a small spirit level (Fig. 6) on the wire near one end and raising or lowering the adjacent bearing as may be necessary to bring the bubble to the center of the glass tube. The end bearings are now in adjustment and it only remains to bring the intermediate ones into line in the same manner. For adjustment in the horizontal plane, hang the device shown in Fig. 3 on the shaft at each bearing and adjust the latter so that the vertical cord just touches the wire.

For adjustment in the vertical plane, the process at each bearing is the same as that already described for bringing the wire into a parallel position with the shaft by means of the V-caliper.

CONSTRUCTION OF EQUIPMENT — The arms and yoke (Fig. 2) may be made of bar steel of sufficient weight to give the required rigidity. The construction of the devices for attachment of

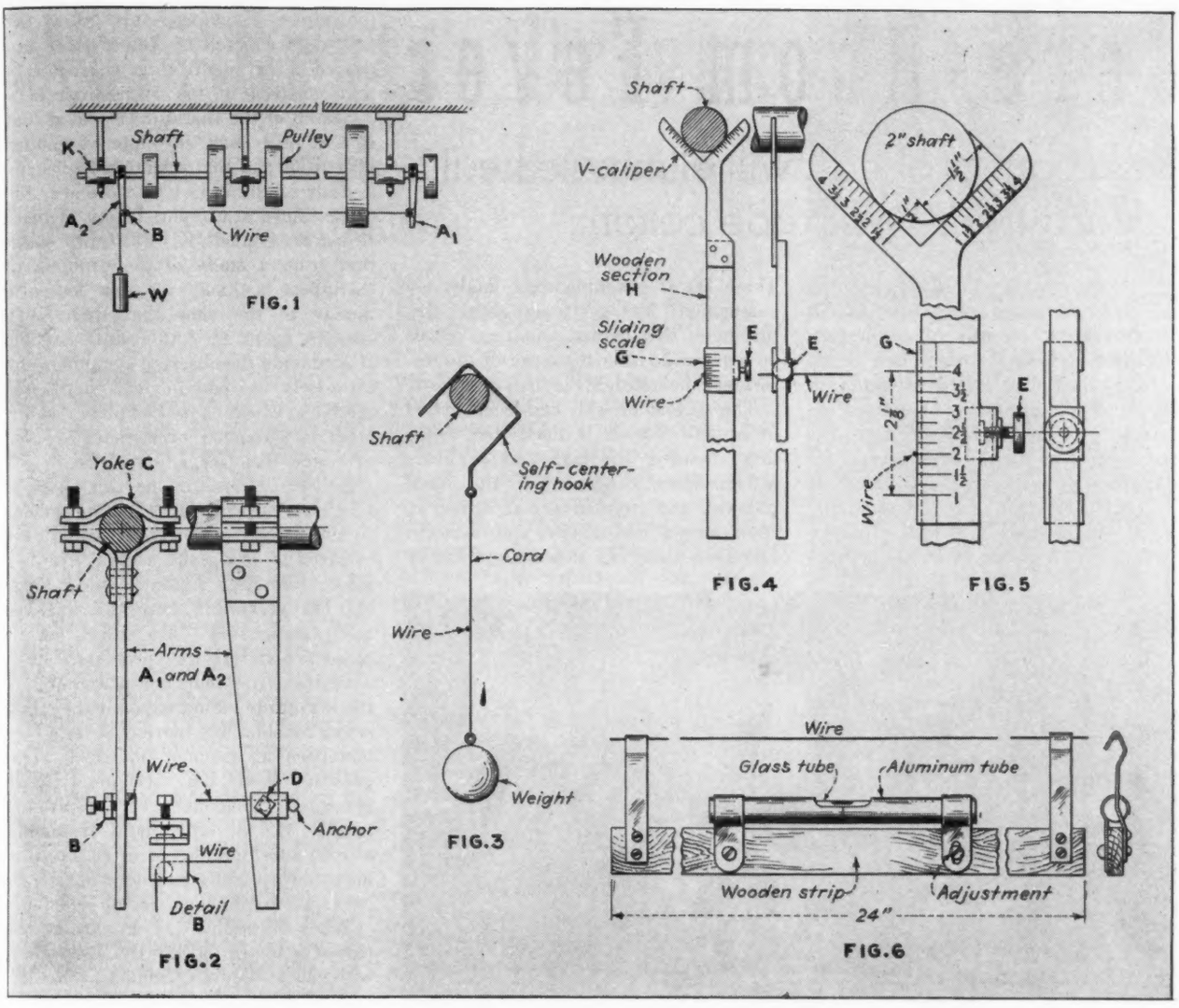


Fig. 1. Method of lining-up shafting with simple home-made device. **Fig. 2.** Detail of one of arms shown in Fig. 1. **Fig. 3.** Self-centering hook for adjusting wire. **Fig. 4.** Device for bringing wire into correct position. **Fig. 5.** Detail of V-caliper and scale shown in Fig. 4. **Fig. 6.** Spirit level in aluminum casing attached to light strip of wood.

the piano wire to the arms is clearly indicated in the drawings. The hook shown in Fig. 3 should be of stiff wire; a small silk or linen fishline may be used for the cord. The weight may be of lead or iron, of sufficient size to produce the necessary tautness for close adjustment with the wire—2 or 3 lb. should be about right.

The spirit level must be of very light weight to prevent sagging of the wire when hung in position. A casing of aluminum attached to a light strip of wood is suggested, as in Fig. 6.

Means for adjustment of the bubble to a true central point when the level is hung on a horizontal wire are provided by the screws which attach the metal casing to the wooden strip. Comparisons for accuracy should be made from time to time with a carpenter's level.

The general construction of the V-caliper and sliding scale is illustrated in Figs. 4 and 5. In the detail shown, the caliper, or upper portion, is made of metal and the lower, or ruler section, of wood, to reduce the weight. The scale *G* slides on the latter, being held in place by three prongs, as indicated, and may be clamped in any position by the thumbscrew *E*.

The fingers of the caliper shown in Fig. 5 make an angle of 90° and the divisions are laid off as follows: Measure ½ in. from the bottom of the V for the first division, marked 1; then ¼ in. between each succeeding division, numbered 1½, 2, 2½, etc. These are for different shaft diameters varying by ½ in. The short unnumbered divisions between these are for variations of ¼ in.

In laying out the divisions on the sliding scale *G*, make the distance between 1 and 4 equal to 2⅛ in., and divide it into six equal parts, to obtain the numbered divisions 1½, 2, 2½, etc. Divide these spaces equally to obtain the points for ¼ in. variations in shaft diameter. All these divisions were first obtained graphically, but the dimensions given will be sufficiently accurate for all practical purposes.

A shaft sufficiently out of line to give decided trouble may not be noticeable to the eye, and, if the friction or binding is not great enough to produce serious heating, it may not be discovered. New buildings, as well as old, are likely to settle unevenly and throw lines of shafting out of alignment. For this reason, conditions should be checked from time to time, and bearings found to be giving trouble corrected.

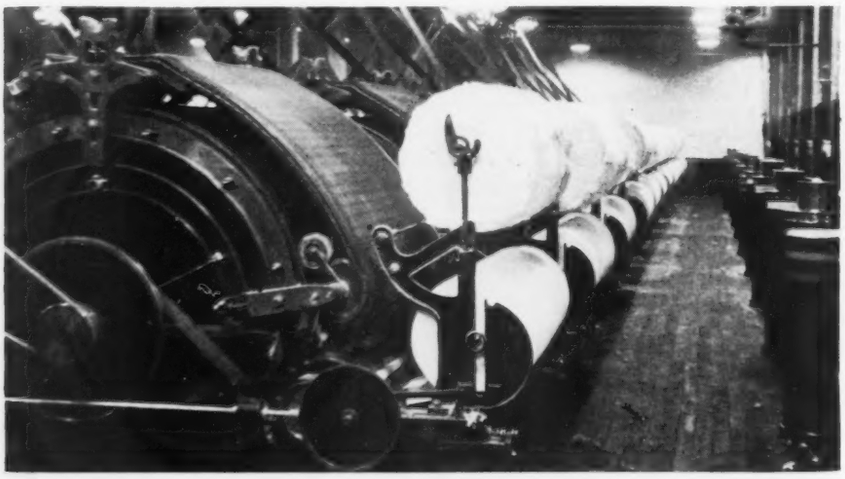
Both lining up a new shaft and truing up an old one call for practically the same procedure, after the former has been placed in an approximately correct position.

Card-Room Fever

Strict control of dust will eliminate health hazard from low-grade cotton

By M. F. TRICE*

AN OUTBREAK recently of respiratory disturbances among workers in a North Carolina mill has called attention to the need of preventive measures to eliminate the health hazard due to excessive dust in cotton card rooms. Investigation by the State Division of Industrial Hygiene revealed that the practice of blowing settled dust off the cards and into the air by means of compressed air results in exposure of the workers to an excessive amount of the finer dust particles for most of the time. To eliminate the hazard, effective dust-control measures are essential.



Use of vacuum strippers and grinders will reduce cardroom dust hazard.

In 1936 a worker in a North Carolina mill, alleging partial disability caused by respiratory trouble which developed as a result of exposure to dust generated in the carding of low-grade cotton, put in a claim for compensation under the Workmen's Compensation Act. He testified that he had been employed by the mill for some seven or eight months, but that he experienced no respiratory trouble until after the beginning of the processing of a low-grade, discolored cotton. Within a few days after this batch of cotton reached the carding machines, he found it impossible to refrain from coughing almost continuously and finally suffered coughing paroxysms night and day. These fits of coughing were finally accompanied by gastro-intestinal disturbances that caused vomiting. Three or four weeks after the onset of the respiratory disturbance the man quit work.

The physician who had been called in by this worker testified that, when first attended, the man had an acute inflammatory condition of the nasal pharynx and bronchi accompanied by fever and a bad cough; improvement had been slow. He stated also that he had treated some 25 or 30 other employees of the mill for the same ailment.

The cotton involved in this outbreak of respiratory trouble was tawny in color and contained much foreign material, such as bits of boll, leaf, and stem fragments. This worker was denied compensation when clinical and radiographic examination revealed no evidence of silicosis or asbestosis, the only dust diseases that are compensable under the law.

RECENT REPORTS from other mills of respiratory disturbances among card room workers have resurrected the case. In the summer of 1938 the Director of the Division of Industrial Hygiene was requested by a local health officer to inspect a mill, the employees of which suffered from an acute respiratory disorder. Investigation revealed that the trouble was confined mainly to the employees of the card room and the cotton opening departments. Here, too, the difficulties developed only after the arrival of a batch of cotton which appeared to be identical in character to that involved in the initial case.

Search of the literature revealed that British mills had encountered similar difficulties and that scientists had made a study of the industry to discover the cause. Thus, in a report by the Medical Research Council, C. Prausnitz states that from a study of the problem of "strippers asthma" he was led ultimately to the view that there is a specific agent in cotton dust capable of producing the observed symptoms and ultimately the pathological changes in the lungs which cause complete disablement in a number of workers exposed to cotton dust for a long time.

In North Carolina the two cases of respiratory disturbances that have come to the attention of the Division have involved a low-grade cotton. No evidence has been obtained to indicate that the workers in these mills suffered any respiratory discomfort while cleaner material was processed. It is doubtless true that the processing of the low-grade cotton exposed the workers to considerably more dust than they had been accustomed to, which alone probably would have accounted for an increased incidence of respiratory trouble. On the other hand, histamine, a toxic substance found in cotton dust, may play a considerable role in the causation of the more acute reactions.

When the settled dust on carding machines is blown off into the atmosphere with compressed air, enough particulate matter and lint are blown into the air to produce a fog. Much of the dust removed from the machines in this manner settles back on them, only to be blown again into the air at the next cleaning. Despite the factors of ventilation and humidity which tend to control air dustiness to some extent, the practice of blowing off machines certainly results in exposure of the workers to an excessive amount of the finer particles for much of the time.

To reduce the hazard, steps should be taken to control card-room dust in every mill in which it is present in the air in excessive amounts. Better ventilation alone will result in a decrease in atmospheric dustiness. There should be at least six complete air changes per hour, and more frequent replacements may be desirable. Use of vacuum strippers and grinders is recommended for all mills; vacuum cleaners for general work should be used wherever possible. In some instances such improvements may practically eliminate the card-room dust hazard; in others, it may be that nothing short of complete inclosure and exhausting of cards will solve the problem.

*Industrial Hygienist for the North Carolina Industrial Commission and the North Carolina State Board of Health.

Short-Center Drives

With tension-control motor bases adopted by Lydia Cotton Mills

By FRANCIS A. WESTBROOK

LYDIA COTTON MILLS, Clinton, S. C., has installed something over 200 tension-control motor bases, using flat belts on very short centers. During the last four years practically every drive in the plant has been converted to this type, including those for spinning frames, slubbers, cardroom lineshafts, weave-shed lineshafts, and air compressors. Results include saving in space due to the short-center drives, saving in power due to reduction of belt slippage, saving in initial cost of belts due to shorter lengths, and saving in maintenance of belts and other equipment due to smoother operation of the machinery. In addition, the new drives have aided the various departments to live up to production schedules and—in some cases—have increased production and improved quality of work.

The following brief descriptions, together with the accompanying photographs, reproduced through courtesy of American Pulley Co., will gave an idea as to how some of these drives have actually been installed. A part of seven lineshaft drives located under the floor of the weave shed is shown in Fig. 1; 52 looms are driven from one shaft. Each drive consists of a 30-hp., 1,150-r.p.m. induction motor mounted on a tension-control base. The motor pulley is 8¾ in. in diameter; the lineshaft pulley is 38 in. in diameter. The distance between centers is only 58 in.; the double leather belt is 10 in. wide.

Two similar drives, but with 15-hp. motors, are used for shorter lineshafts, each serving 26 looms. The diameters of the motor and lineshaft pulleys are the same as mentioned above, but the distance between centers has been shortened to only 28 in. The short center distances are essential because of the limited space between the parallel lineshafts, and use of tension-control bases makes the short distances feasible, despite the large difference in diameters of the motor pulleys and lineshaft pulleys.

The motors and bases are mounted on the ceiling of the weave-room basement, and the belts pass up through the ceiling to the floor above, on which the looms are located. With this arrangement, the drives are out of the way and yet are readily accessible. The drives do not take up any space that could be used for productive machinery and, at the same time, they leave the basement free for storage purposes. These drives are operating with little or no attention, except for the oiling of motors and bearings, and one take-up to compensate for slight stretching of the belts during the first month.

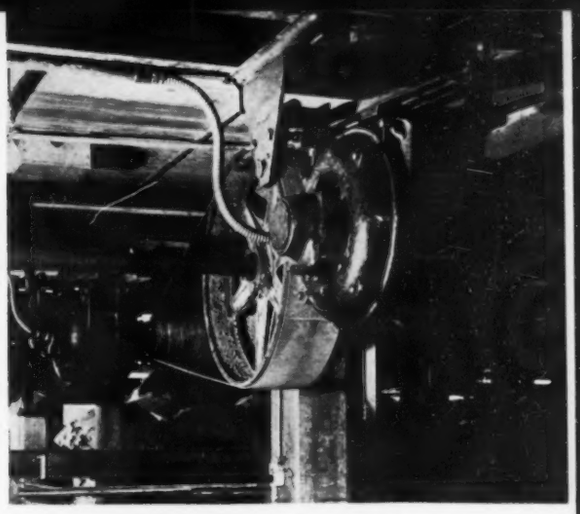
DRIVES FOR THE SPEEDER or fly frames are shown in Fig. 2. Note that here again the drives have very short centers. The motors are mounted on metal bases which keep them off the floor.

This compact arrangement gives an exceptionally neat appearance and makes it comparatively easy to keep the aisles clean. The motors are of the standard cotton-mill type. Similar drives have been used for the spinning frames, for both warp and filling.

Card-room drives are illustrated in Fig. 3. This is another instance where it was advisable to mount the motors on the ceiling, but in this case the individual belts to the cards drive downwards. Here again, use of tension-control bases has permitted very short centers, despite the difference in diameters of the motor and lineshaft pulleys.

The very compact drives make for a neat appearance and cleanliness.

The compressor drive shown in Fig. 4 consists of a 50-hp. motor mounted on a tension-control base and designed to give very large speed reduction. The motor pulley is 10 in. in diameter and the driven pulley is 38 in. in diameter; the belt is 8 in. wide. Distance between centers is about 60 in. This picture was taken with the drive in operation, and with a time exposure. That there was practically no vibration is evident from the clearness of the print. The location of the drive in a congested space under the mill and in an out-of-the-way place made it desirable to have a short center distance and to reduce to a minimum the need for taking up belt stretch.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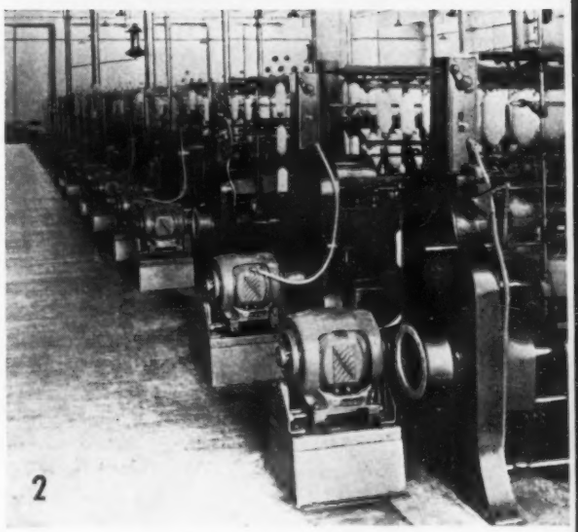
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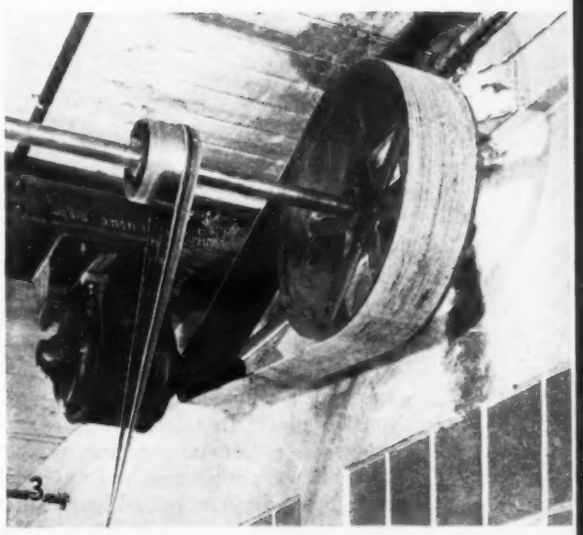
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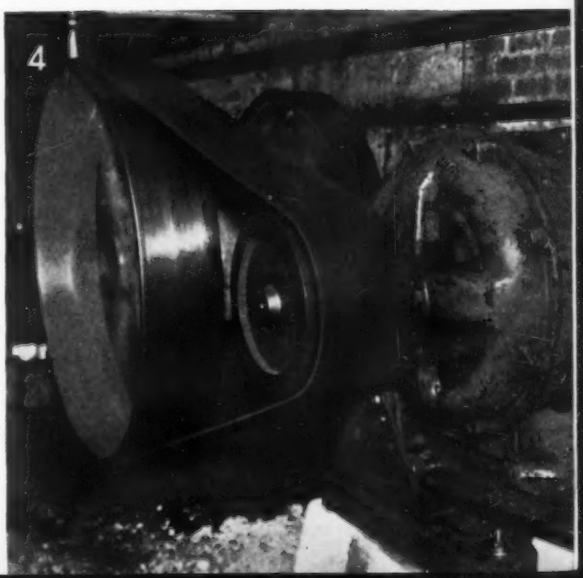
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Clothroom Layout Hints

LAYOUT of modern clothrooms is essentially a traffic problem. The cloth should be routed from the "in" door to the "out" door as carefully as the lanes of a busy highway intersection are planned to avoid cross movements and to facilitate operation. Proper lighting arrangement is also a factor of great importance.

Fig. 1 suggests a plan for a long, narrow room. Racks for cloth awaiting treatment are placed as near the "in" door as possible, and the rolling and sewing machines stand close to them. In a straight line the cloth travels automatically from this machine to the shear, and thence to a truck, which carries it to the inspecting and examining machines placed along the window side of the room.

When the operator of an inspecting or examining machine comes to the end of a piece, the machine is stopped, the seam ripped, and the roll or book placed in a truck to be carried to the packaging and shipping room.

One shear will handle enough cloth to keep a group of inspecting machines busy; the number is determined by the kind of cloth and the speed with which it can be properly inspected.

It is most desirable that the sewing and rolling machines be in line with the shear, although in some rooms this may not be possible. In such cases one is placed alongside the other and the roll, when made up, is brought to the front of the shear on a truck.

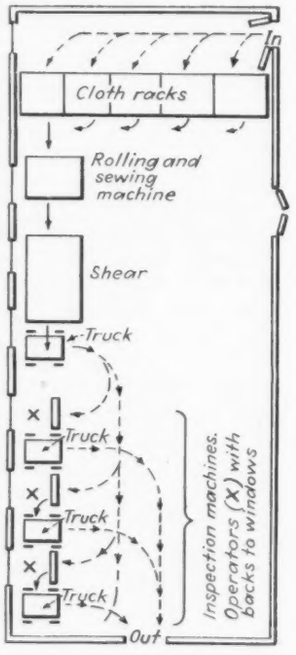


Fig. 1. Layout for a long, narrow clothroom

Fig. 2 shows a typical plan for a square clothroom. This is a corner room, with light from two adjoining sides, and entrances at fixed points in the wall. Its layout could have been improved had it been possible to locate the doors differently.

Almost always there is a clothroom plan that will economize space and assure a flow of goods without traffic confusion. The result to be obtained from such a layout makes well worth while the consideration necessary to obtain a good floor plan.

Abstracted from September and October, 1939, issues of Hermas Machine Co.'s house organ, *The Clothroom Spotlight*.

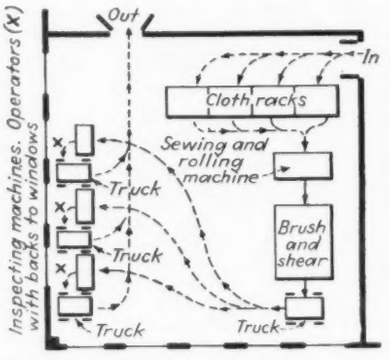


Fig. 2. Plan for a square clothroom

Dry Carbonization

DRY CARBONIZATION is a comparatively little used method of removing vegetable impurities from wool, but one which, apparently, deserves more consideration. In a large measure, the process is at present confined to wool rags, although some tops and raw wool have been dry carbonized on a production basis and experimental dry carbonization of piece-goods has also been carried out.

Among the merits of dry carbonization can be included the fact that due to the low heat required for the process (rarely in excess of 150° F.) the condition of wool carbonized by this method is considerably better than might be obtained by other methods of treatment. Color and handle of the stock are unchanged. Dyed fabrics retain their original bright and uniform colorings. Further, the cost of the actual carbonization is estimated to be only approximately 60% of that by the wet method usually employed.

On the other hand, the highly corrosive action of the carbonizing medium (hydrochloric acid gas) adds to the cost, since it makes necessary frequent replacement of parts, and requires use of more expensive belts, chains and other power-transmission devices than might otherwise be used.

For this reason, those actively interested in dry carbonization are constantly investigating corrosion resisting metals, new types of power-transmission equipment, etc., intent on finding more efficient and economical methods of carrying out the process.

One reason more mills have not changed over to dry carbonization may be found in the fact that the process requires entirely different equipment from that used in the wet method. This, coupled, with the fact that the over-all cost of carbonization by either method is about the same, has made it difficult for the mills to see compelling reasons for changing from one method to the other.

For 65 years, Wm. Spink Co., Philadelphia, has been successfully using the dry method of carbonization.

From 300 to 500 lb. of rags, depending on the type of material being handled, are loaded into a large slowly-revolving metal drum. The drum has a hollow axle through which hot air is introduced so that the stock may be thoroughly dried. When the desired condition is obtained, hydrochloric acid gas, made by vaporizing hydrochloric acid in a coke-fired retort, is forced through the hollow axle onto the stock, in place of the air used for drying the rags.

Application of gas and slow revolution of the drum are continued for from 2 to 3 hr. Following this, the stock is dusted, neutralized in ammonia and water, and dried in a continuous dryer of the type usually used for raw stock. The carbonized rags are either shipped as is, or made into wool shoddy. Vegetable matter removed from them is sold to farmers for use as fertilizer.

TEXTILE EQUIPMENT NEWS

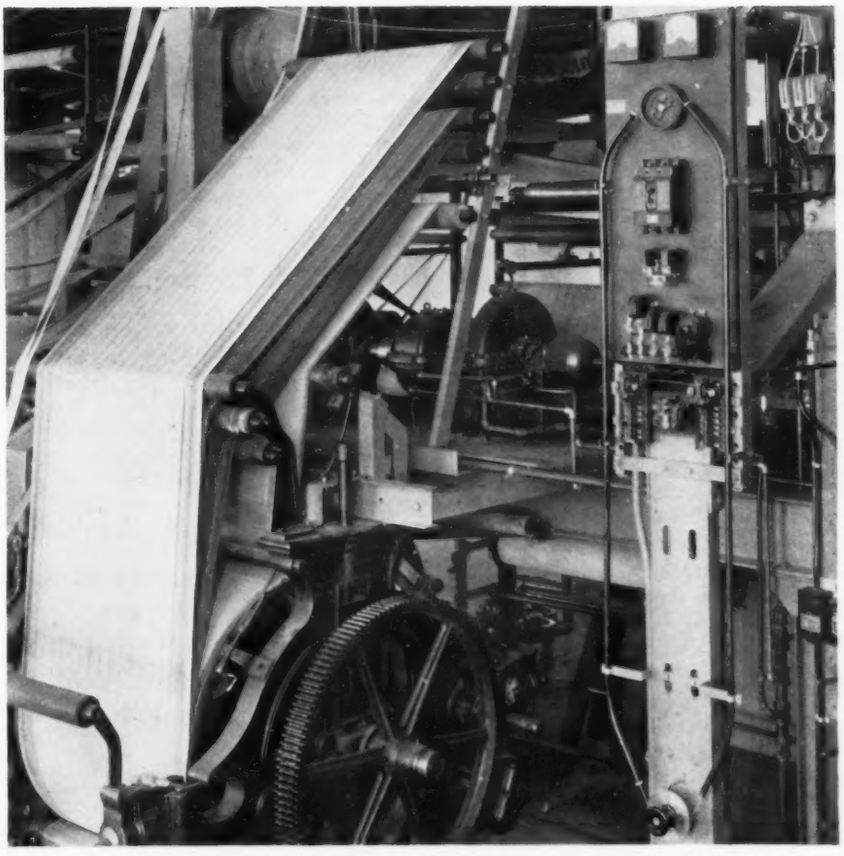
Turbine Mechanical-Electric Drive

In a new type of range drive for textile equipment, General Electric Co., Schenectady, N. Y., has combined mechanical and electrical drive from a single turbine. The turbine is coupled to the lead or pacemaking unit of the range, and to an a-c. generator. Units of the range other than the lead one are motor driven, practically in synchronism with the lead unit, because the a-c. frequency varies directly with the turbine speed.

In one application, there are eight units in a soaper range. The dry cans are turbine driven, and the other seven units, which are on three floors inaccessible for mechanical drive, are induction-motor driven. The turbine exhaust system is used to heat the dryers, and speed is adjusted to the drying characteristics of the fabric in process.

In another installation, which is illustrated in the accompanying photograph, the method has been applied to driving a printing range. In one mill having both printing and soaper ranges driven by this method, the soaper range has been operated at over 175 yd. per min.

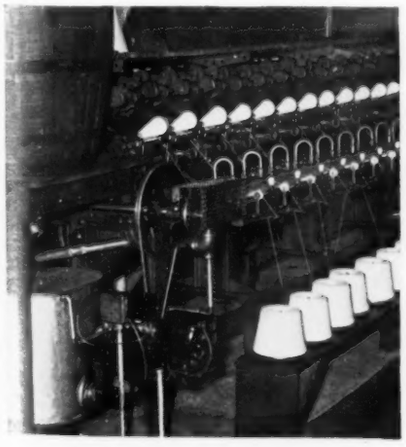
Advantages said to accrue to mills having steam available, together with a process requirement for low-pressure steam, include low first cost, operating expense, and maintenance.



Turbine mechanical-electric printing-range drive (General Electric)

Random Dyeing Machine

For random dyeing of yarn, a new machine has been developed by Roanoke Mills, Inc., Roanoke, Va. It is planned to make the equipment available to other mills. The system is used in conjunction with a winding, spooling, or similar machine; it is stated the device can be attached to practically any machine of this type. Dye liquor is forced through spray nozzles, and the yarn to be dyed is passed under and through this spray while being transferred from one package to another. The random pattern is controlled by an oscillating guide which brings the yarn in contact with the spray, or removes it therefrom.

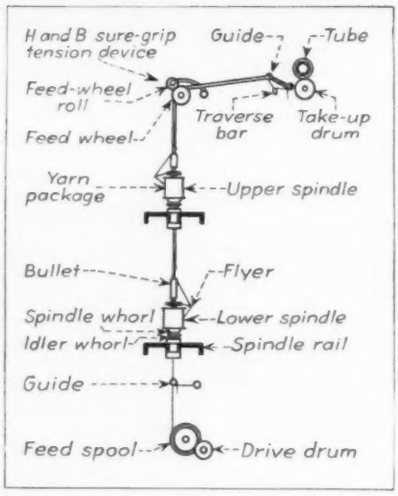


Random dyeing machine (Roanoke Mills)

On the basis of mill tests made during the last two years, it is stated that practically any random pattern can be produced, with only minor adjustments, that the dyeing is accomplished during winding with little extra cost, that attention and upkeep required by the device is negligible, and that no expensive chemicals are necessary in making up the dye liquor used.

Rubber Covering Machine

Additional data have recently been made available concerning the machine for covering rubber yarn which was introduced a few months ago by H & B American Machine Co., Pawtucket, R. I., and described briefly in the December, 1939, issue of TEXTILE WORLD. The machine wraps the rubber core with two coverings of yarn, wound in opposite directions from each other. It is single sided, with 40 deliveries, and will cover either light or heavy rubber. Either beam or spool feed, and reel or tube take-up, can be furnished. The accompanying schematic diagram illustrates the machine with spool feed and tube take-up. The feed spool unwinds a strand of rubber upward through the center of the lower spindle. Just above the bullet, it is covered by a wrapping of yarn. The material then moves upward through the center of the upper spindle, and is wrapped with an-



Rubber Covering Machine (H&B)

other layer of yarn of the correct number of turns to give a properly balanced covered rubber yarn. The yarn is then wound on the tube.

With beam feed and reel take-up, the process is the same, except that rubber is drawn from the beam by a positively driven lower corrugated wheel, and wound on a revolving reel.

One of the important features of the machine cited is constant control of elongation. This is accomplished by means of two variable-speed drives, one of which controls the speed of the upper spindles so that the outer wrapping of yarn will be placed on the core in the proper direction and with the proper amount of twist; the other makes it possible to compensate for decreases in diameter of the yarn package. A unique design of spindle package holder cuts time required to change packages to a minimum. A tension device prevents the covered rubber yarn from slipping as it advances through the spindle to the reel or tube; and a new flyer, designed for smooth running and elimination of fly, also improves quality of the yarn and reduces the number of yarn and rubber breaks.

For Equalizing Hosiery Lengths

Stortz Devices, Milwaukee, Wis., is marketing a recently patented device and system for "measuring" leg blanks of full-fashioned hosiery while still on the knitting machine. It is said that the method makes possible increased production, reduces the number of imperfect stockings, and eliminates much waste of raw silk.

The device consists of an arrangement of equalized and synchronized weights which are attached to each section of a machine, in place of the reel weights. The device has the same pull or drag on each blank; hence, after a machine has been adjusted with it, even lengths are bound to result, since all adjustments have been made on an identical basis. Following adjustment, the device is removed and the reel weights re-connected.

Adjustment of machines once in every two weeks of operation is recommended by the manufacturers of the device, which, it is stated, can readily be used for any thread or gage, and for any number of sections up to 26.

Lockstitch Machine

For single-needle, lockstitching in light- and medium-weight fabrics, Singer Sewing Machine Co., 149 Broadway, New York, has introduced its Model 400w1, which features a double rotary thread take-up. This feature, it is said, makes possible continuous production of perfect lockstitching at speeds up to 5,000 stitches per min., without risk of overheating or damage to machine parts. The new take-up consists of two small disks. One rotates at the speed of the arm shaft; the other at the speed of the rotary hook. Both disks rotate in the direction of the pull on the thread in setting the stitch. Whipping of the thread is said to be reduced, and thread abuse held to a minimum.

Single-needle, lockstitch sewing machine (Singer)

In the double rotary thread take-up a number of reciprocating parts have been eliminated, it is stated, thereby reducing sources of vibration and wear.

Additional features of the machine which are cited include anti-friction ball and roller bearings, smooth and quiet running rotary motion, minimum number of reciprocating parts, ease of threading and lubrication, compact and rigid feed mechanism, positive stitch-length control, and trouble-free performance of automatically lubricated rotary sewing hook.

Tensile-Strength Tester

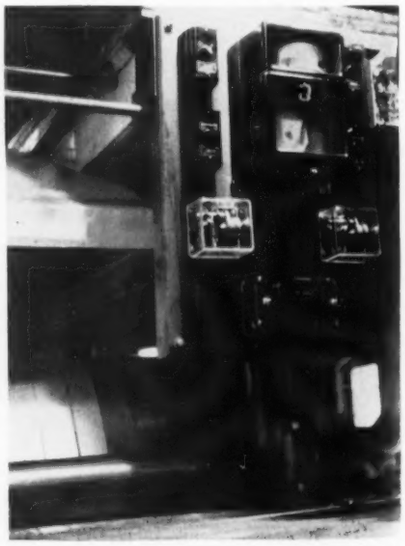
Saxl Instrument Co., Providence, R. I., has developed a tensile strength tester with a capacity of 2,200 lb. Use of a flexible shaft motion makes possible the recording of stress-strain diagrams in a rectangular coordinate system. The machine has a dead pointer which indicates maximum deflection and is equipped with automatic electric return. The machine is said to be sensitive for lower loads, as well as the higher ones.

The company has also recently introduced a device for testing the porosity of cloth by directing air against the fabric, and measuring the current after it has passed through the cloth.

Moisture-Control Equipment

For use in connection with drying, finishing, and slashing machinery in cotton, woolen, worsted, and rayon mills, a new moisture-control device has been introduced by Dritester, 105 Montclair Ave., Montclair, N. J. The equipment is designed to test and record constantly the amount of moisture in the material being processed. In accordance with these determinations, the speed of the machine is automatically increased or decreased. Thus, uniform moisture content of the delivered material is assured.

Among advantages of the equipment cited are that the natural moisture content of the fiber is maintained, even conditioning is assured, machine speed is constantly held at the highest point consistent with proper conditioning, and the control operates with any type of material without changes or recalibration. In slashing, it is said, use of



Courtesy Suncook Mills

Moisture-control equipment (Dritester)

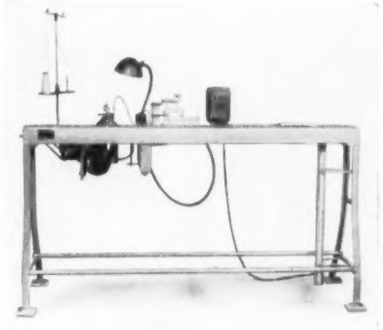
the equipment makes possible increases in yarn breaking strength, and measurable savings in steam used.

Needle Oil

A stainless needle oil for knitting machines has recently been introduced by H. C. Harding, Inc., 2nd & Tilghman Sts., Philadelphia. It is stated the oil contains agents which keep needles and sinkers from accumulating rust, sericin, and hard grease. This results from the fact that the oil does not run off, but coats needles and sinkers with a film of oil which keeps moisture from penetrating. Immediate emulsification, which makes possible thorough removal from hosiery without excessive boiling, is another feature cited for the new oil.

Gray-Goods Carrier

As an aid to production of straight seams with selvage edges in alignment, Merrow Machine Co., Hartford, Conn.,



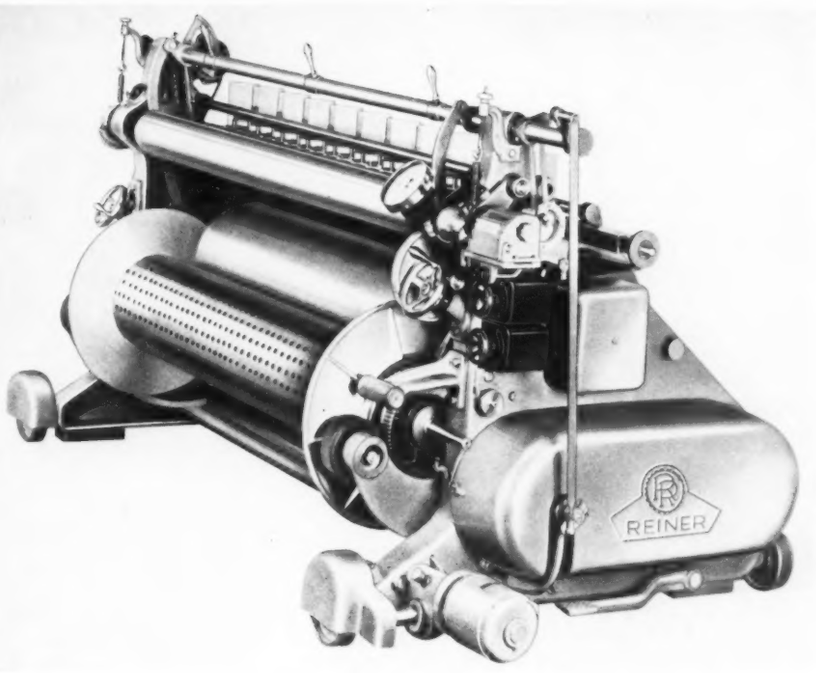
Gray-goods carrier (Merrow)

has introduced a new gray-goods carrier designed for use in conjunction with its butted-seam machine. Models are available for fabric up to 60 in. in width, and it is stated the machine can successfully be used on voiles, cottons, rayons, silks, and back grays for print cloth, in either wet or dry condition.

Stop-Motion for Looms

Bahan Engineering Co., Charlotte, N. C., is offering an electric warp stop-motion for looms, which is said to have several unique characteristics. One of these is the method by which the stop-motion operates. This is accomplished electrically through connections and relays in the power circuit actuated by the heddles, which serve also as drop wires and eliminate separate drop wires.

It is stated that more uniform tension can be maintained on warps; and that friction, fly, and interference with sizing on the yarn are decreased with the new apparatus.

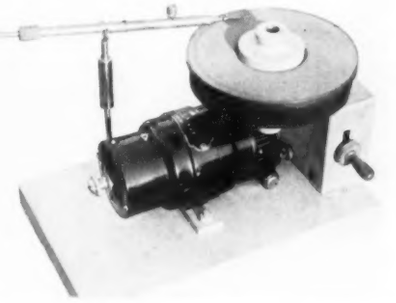


High-speed beaming machine (Reiner)

Snag-Resistance Tester

An instrument for measuring the resistance of hosiery to snagging is being offered for sale by United States Testing Co., Inc., Hoboken, N. J. The device, first announced about eight months ago, was at that time being used to test the wearability of only one maker's hosiery. A brief description appeared in the August, 1939, issue of TEXTILE WORLD.

Essentially, the machine consists of a revolving disk covered with sponge rubber, and an adjustable needle controlled by a variable weight. Specimens cut from the hosiery to be tested are placed on the disk, the tension weight on the needle is set in place, and the needle then placed in contact with the hosiery. Then, the disk is revolved one full turn at a time. Weight on the needle is increased in increments of 1 grain per revolution until the snag point is determined.



Snag-resistance tester (U. S. Testing)

Beaming Machine

A full-width beaming machine, manufactured by Robert Reiner, Inc., Weehawken, N. J., has been announced. It can be used with yarns of cotton, wool, and both filament and spun rayon. The machine is said to have a direct beaming drive which operates on a new principle, an adjustable pressure roller which assures correct yarn pressure throughout the entire operation, and an ingenious beam-supporting mechanism which makes possible insertion and release of beams merely by operation of a handwheel.

Speeds ranging from 50 to 650 yd. per min. are made possible by the variable-speed motor with which the machine is equipped, and for maintenance of constant speed there is a control mechanism regulated independently of the pressure roll. Uniform length of warps is assured by operation of a yardage counter which automatically stops the beam when the desired length of yarn has been wound. An automatic stop-motion also operates on end breakage. The quick-acting brake can also be applied, when desired, from push-button control stations.

Useful Accessories for Textile Mills

Lubricator. Bromley & Son, Kearny, N. J., have introduced a lubricator designed to move oil by gravity, under controllable flow, from a transparent, air-tight, plastic reservoir to bearings. A ball valve which closes the reservoir

is opened by a pin actuated by a solenoid or by hand. As much as 50% variation in feed rates is said to be obtainable by raising or lowering the wick unit in its well.

Starter. Square D Co., Milwaukee, Wis., has announced a new, smaller-size starter; maximum polyphase ratings are 2 hp., 220, 440, 550 volts; maximum single phase ratings are 1 hp., 110 volts or 1½ hp., 220 volts. The new starters are available with general-purpose, dust-tight, and water-tight inclosures.

Measuring Valve. Farval Corp., 3271 E. 80th St., Cleveland, has developed a lubrication measuring valve which combines a single inlet port with two to eight outlets per block. Means are provided so that, by connecting a grease gun to the nipple at the inlet port, all bearings connected to the block can be greased; an indicator stem attached to each valve piston shows when each bearing has received the correct amount.

Bookkeeping Machine. Burroughs Adding Machine Co., Detroit, Mich., has recently announced a high-speed bookkeeping machine designed to post an original ledger and original statement, prove the figures on both records, and provide a journal—all in a single operation.

Diffuser. Goodrich Electric Co., 2900 N. Oakley Ave., Chicago, has developed a light diffuser in which an unusually deep-skirted reflector and a much smaller globe, which is concealed above the bottom of the skirt, combine to make possible high-intensity illumination without glare.

V-Belt Fastener. Flexible Steel Lacing Co., 4607 Lexington St., Chicago, has brought out a V-belt fastener designed to permit users to make up a wide variety of multiple V-belt drives from stock coils of belting.

Valve Improvement. Manning, Maxwell and Moore, Inc., Bridgeport, Conn., has announced a line of valves having no bonnet joints; leakage through the gasket joint between valve body and bonnet is thus eliminated, it is said. The valves are available for pressures up to 2,500 lb. at 1,000° F.

Oil Window. Bijur Lubricating Corp., 43-01 22nd St., Long Island City, N. Y., has developed an oil window said to afford improved visibility when used in connection with oil reservoirs, containers, and lubricators. Standard sizes of the window are ¾, 1 1/16, and 1 ⅝ in.; the window, it is stated, is a self-contained unit which can be conveniently installed in a simple bored opening.

New Dyes and Chemicals

Pigment Dyeing Method for Raw Stock and Yarn

A new method for applying vat dyes to cotton raw stock or yarn in circulating types of apparatus has been announced recently by Calco Chemical Division of American Cyanamid Co., Bound Brook, N. J. This process, known as the Calcoloid pigment dyeing method, is said to eliminate cross-overs, give level dyeings, improve penetration, assist shade matching, and insure maximum fastness to washing and crocking. For use with the pigment dyeing method, Calco has developed a range of fine, highly dispersable vat dyes, which are sold under the brand name, Calcoloids.

The uniformity of dyeings produced by the pigment method as contrasted with those obtained by the usual reduced method is illustrated by Figs. 1 and 2. The tubing shown in Fig. 1 was knit from yarn taken from four locations from the outside to the inside of a yarn package dyed by the new pigment method; it will be noted that the dyeing is level and well penetrated. The tubing shown in Fig. 2, knit in the same way from yarn taken from four locations from a yarn package dyed by the reduced method, is unlevel and poorly penetrated.

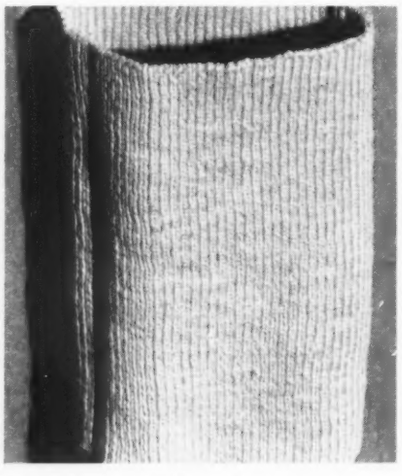


Fig. 1

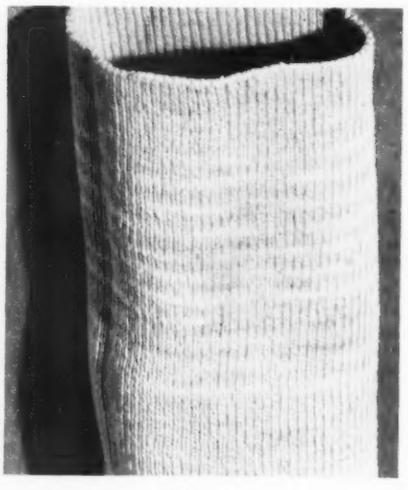


Fig. 2

Prior to the announcement of the new method, it was operated for more than a year on a plant scale by several large mills in order to confirm the results obtained in the Calco laboratory. These practical trials have demonstrated that no modification of standard types of circulating equipment is necessary and that larger packages than usual can be dyed. Other advantages cited for the pigment dyeing method are that it simplifies the dyeing procedure, utilizes labor more efficiently, decreases sensitivity to variations in the winding of packages, and secures greater color value from the dyes.

Detergent, Wetting, and Emulsifying Agents

Development of a new series of compounds having marked detergent and surface-active effects has been announced recently by Onyx Oil & Chemical Co., Jersey City, N. J. These compounds, known as the Xynomines, are available in several different types, including Xynomine Powder, a general utility textile auxiliary; Xynomine Paste, an aqueous paste formulated to promote easier solubility; Xynomine BM, a compound particularly serviceable for scouring and water-softening purposes; and Xynomine Degum, a preparation buffered with alkalis to a pH of 10.2 so as to yield an optimal detergent agent.

Chemically the Xynomines are sulphated boro amide esters of alkyl compounds containing between twelve and eighteen carbon atoms. All the Xynomines are characterized by the following general properties: powerful detergent action; excellent solubility in soft and hard water; easy solubility in acid and alkaline solutions; dispersive action on lime and metallic soaps; potent wetting and penetrating action; yield neutral solutions; disperse and emulsify oils, dyes, waxes, etc.; act as protective colloids; do not become rancid or develop an odor during storage or ageing; reduce felting of wool materials to a minimum; are stable and exert no

adverse action on hypochlorites, chlorine, or peroxide bleaches; have no deleterious effect on fabrics during ageing; foam vigorously under acid, neutral, or alkaline conditions.

Among the many applications for the various types of Xynomines are included scouring of rayon, wool, and other yarns and fabrics; degumming silk hosiery and piece goods, washing dyed or printed fabrics; as protective colloids in bleaching; as dyeing assistants; as emulsifying agents in finishing, etc.

Synthetic Wax

A new high-melting synthetic wax has recently been introduced by Glyco Products Co., Inc., 148 Lafayette St., New York. This product, known as Acrawax C, has a melting point of 133 to 134° C., but is not hard and brittle like most high-melting waxes. It is insoluble in water and soluble in hot mineral spirits, turpentine, toluol, naphtha, and similar hydrocarbon solvents. Solutions in turpentine, naphtha, and toluol produce a stable gel on cooling. Acrawax C blends with paraffin, carnauba wax, candelilla wax, rosin, etc.

Synthetic Resins

Three new synthetic resins of the alkyd or modified alkyd type have been introduced recently by Quaker Checimal Products Corp., Conshohocken, Pa. Two of these products, Diapene OA-50 and Diapene OA-33, are recommended for use in finishing rayon, acetate rayon, spun rayon, rayon-silk, and rayon-cotton fabrics. Diapene OA-50 produces a full-bodied, firm drapy handle. Diapene OA-33 imparts a full, but soft, finish and may be employed in conjunction with Diapene OA-50 to modify the firm finish of the latter. The third product, Diapene E-60, is used in starch finishing and back-filling to provide softness and adhesion, give a non-dusting finish, and promote brighter colors. The resins are produced in both base and solubilized forms.

Softener and Emulsifier

A new softener with high lubricating properties and essentially complete rinsability from textile fibers is announced by the Dyestuffs Division of E. I. du Pont de Nemours & Co., Wilmington, Del. This compound, known as Avitex L, is a viscous, brownish, oil-like product, which disperses to form clear emulsions in water. It is soluble in the presence of high concentrations of salts such as common salt, glauber salt, and epsom salt, and is resistant to high degrees of harness in water. It is highly stable in solution on prolonged boiling.

Avitex L is recommended by the manufacturer for use where a well-lubricated finish is required on fabrics or yarns. It is said to increase the absorbency of textile fibers, making it effective for finishing fabrics to be Sanforized, and to have a pronounced anti-static effect on viscose rayon staple fibers.

A new alcohol sulfate emulsifying agent derived from lauryl alcohol is also announced by Du Pont. This product, Duponol G, is a translucent amber-colored paste to be added to the oil phase for preparation of emulsions. It is said to be particularly effective when employed in conjunction with Ocenol or Stenol. It forms limpid solutions with mineral and vegetable oils in the presence of soluble oils.

Direct Dye

General Dyestuff Corp. announces the following new product:

Benzoform Red G, a direct dye which, when aftertreated with formaldehyde and acetic acid, produces on cotton and rayon bluish shades of a full red; dyeings possess fairly good to good fastness to washing and can be discharged with either a neutral or an alkaline printing paste.

New Publications

The How and Why of Decentralization

America Reborn—A Plan for Decentralization of Industry; by Ralph L. Woods; Longmans, Green & Co., New York; $3.00.

To those who recognize the problem in the centralization of industry and of people in the United States—and who doesn't?—this study is a welcome one. After showing how economically lopsided a nation this is, the author doesn't stop there. He details at length why and how decentralization of industry can be effected. He deals with freight rates, wages, taxes, natural resources, labor supply, credit, labor legislation, etc. The final chapter answers some of the more common objections to decentralization and points out how such a metamorphosis may be activated and stimulated.

This study is a challenging one—and long overdue.

That Mutual Understanding

Getting Along With Labor, by Leigh S. Plummer; Harper & Brothers, New York; 1.50.

Granting that mutual understanding and confidence between management and employees are the basic essentials of industrial peace, thoughtful employers will go one step further in an effort to learn how to attain that understanding and confidence.

One way is to read this able volume of case histories in which Mr. Plummer ably illustrates the accomplishments in industrial relations of a few of our better known industries.

The cases are well chosen because each company has attained the same goal via a different road: guarantee of regular employment; wage dividends; profit sharing and wage saving programs; company publications for employees; and many other plans. All have shown how the contradictory elements, the capitalist who looks for a return on his investment and the wage-earner who looks for a weekly pay envelope, are both interested in the same principle—the success of their company.

This is a good little book, and a good one to pass on to the overseer who can tell his men about it.

The 1940-Model Public Library

Business and the Public Library; Edited by Marian C. Manley; Special Libraries Association, 31 East 10th Street, New York; $2.00

Ten years ago, very few textile manufacturers would have been interested in such a book as this; today, a small but important group in the industry will use it; ten years from now, a very considerable percentage of textile men will profit by this type of reference-book.

The change, in our opinion, reflects progress. Industry finds it more and more necessary to build up its knowledge of sources of business information. Business branches of public libraries are an important link in the chain.

As economic and technical trends become increasingly complex, intelligent use of business books, business papers, business directories and other business media becomes increasingly essential. The public library, 1940 model, helps to make intelligent use possible. As time goes on, more and

more textile firms will develop special libraries of their own. In the process of that development, and in the subsequent utilization of the special libraries, the public libraries will perform an indispensable function.

We suggest that readers expose themselves to this book as an approach to a subject which will engage more and more of their time in the future.

What They Found in Natchez

They Found It In Natchez; by Theodora Britton Marshall and Gladys Crail Evans; Pelican Publishing Co., New Orleans, La.; price $3.00.

Most of our southern readers know Natchez. More and more northerners are becoming acquainted with it. The annual Pilgrimage in March attracts more and more thousands each year.

This volume is far more than a travel book. It does not offer merely the sweetness-and-light story of Natchez. Instead, it gives its background—good and bad, but never indifferent. To this reviewer, the account of the Natchez Indians was in itself worth the price of admission.

In addition to history, the authors give accurate and detailed information concerning each of the ante-bellum homes which make Natchez a place apart.

Those of our readers who miss this year's Pilgrimage will do well to buy a copy of They Found It in Natchez, and spend the next 11 months getting ready for the 1941 Pilgrimage. They will find in Natchez something they can find nowhere else.

News of Suppliers

Aridye Corp., New York, announces that Clovis S. Powell, formerly superintendent of Ware Shoals Bleachery, and for 28 years connected with that firm, will be connected with the Greenville, S. C., office of the Aridye organization.

Reilly-Whiteman-Walton Co., Conshohocken, Pa., has acquired the business of H. E. Bishop Co., marketers of Windsor textile oils, sizes and processing products, effective Mar. 1. H. E. (Bill) Bishop, who has served as sales manager for U. S. Testing Co., Inc., and as executive secretary of Throwsters Research Institute, will be associated with the Reilly-Whiteman-Walton organization.

Austin Co., Cleveland, Ohio, has appointed George W. Plaisted as vice-president and general sales manager of the company with headquarters in Cleveland. For the last seven years he has been vice-president in charge of West Coast operations. He has been with Austin since 1916.

William L. Morgan, of Greenville, S. C., who has been appointed sales representative for textile loom supplies and roll coverings manufactured by Dayton (Ohio) Rubber Mfg. Co.

Calco Chemical Division of American Cyanamid Co. has nearly completed a new and important addition to its powerhouse at Bound Brook. One new steam generator being installed will develop 120,000 lb of steam per hour. Calco will also build an addition to the warehouse at its Carolina Branch in Charlotte, N. C.

Laminated Shim Co., Long Island City, N. Y., has started work on a new plant at Stamford, Conn., which will be completed in June. It will contain provision for new general offices.

Piedmont Reed & Sales Co., 16 Brown St., Greenville, S. C., established Nov. 1, 1939, is manufacturing reeds and heddle rods for sale to mills in the southeastern States. H. E. Littlejohn, for many years with Steel Heddle Mfg. Co., Greenville, and later with Drayton Mills, Spartanburg, S. C., is president of the new concern. H. C. Beattie, Greenville cotton broker, is treasurer.

E. H. Jacobs Mfg. Corp., which removed its plant to Charlotte, N. C., from Johnson City, Tenn., a little over a year ago, is now building its third warehouse at its plant on Dowd Road. The new unit will be completed by the middle of March.

Original Bradford Soap Works, Inc., West Warwick, R. I., have appointed James A. Greer, Greenville, S. C., as southern manager for sale of their textile soaps, sizing compounds and finishing oils. Mr. Greer for 18 years was southern manager for the *American Wool & Cotton Reporter*, and for four years was southern circulation representative for TEXTILE WORLD. He will have an office and warehouse at Greenville.

James A. Greer now southern manager for Original Bradford Soap Works, Inc.

Meyer & Marks Yarn Co., New York, has moved its offices from 425 Fourth Ave. to 66 Leonard St.

Crescent Corp., Fall River, Mass., liquidators, have opened an office at 40 Worth St., New York, with Walter L. Lowry in charge.

United States Machinery Co., New York, has organized an export and

Basketball trophy donated by Corn Products Refining Co. to Southern Textile Athletic Association which replaces a previous trophy donated by Corn Products. The latter was retired last year by Southern Bleachery's team which won it for the third time.

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ACETATE RAYON
Repeated by demand summer after summer, and every summer more popular than before. Woven from the first yard in Eastman acetate rayon, this modern classic has built its reputation upon the inherent beauty and serviceability of a fine fiber . . . upon the dazzling whiteness of Eastman acetate rayon which lasts through washings or cleanings...upon its affinity for dye which makes it possible to achieve the most subtle pastels, the most vibrant tones . . . upon its sleekness and suppleness, its exceptional uniformity.
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For further information consult A. M. TENNEY ASSOCIATES, 10 East 40th St., New York City. Sales representatives for the Tennessee Eastman Corporation, Kingsport, Tennessee, subsidiary of the Eastman Kodak Company.

engineering department for textile machinery, and offers a complete service to textile manufacturers. V. T. Giardino is in charge. The department will export the products of H & B American Machine Co. J. P. Mudd, H & B factory representative, is now on a trip through South America.

American Management Association, New York, will hold its 10th Packaging Exposition and Conference, Mar. 26 to 28, at Hotel Astor, New York.

Johns-Manville Corp., New York, announces the 75th anniversary of the commercial use of asbestos.

United States Testing Co., Inc., has announced the merger of the personnel and facilities of the E. E. Free Laboratories with the testing company. Complete equipment, staff and associates of the E. E. Free Laboratories will be

Republic Steel Corp. has recently improved and extended its facilities for production of stainless steel. The 5-acre cold-rolling and finishing plant at Massillon, Ohio, and a new 50-ton electric furnace at the Canton, Ohio, plant, which were formally put into operation on Feb. 28, were previewed on Feb. 27 by a large group of trade-paper editors. Photograph shows wide strip of stainless steel coming off one of five continuous normalizing and pickling lines in Massillon plant.

maintained at their present location, 175 Fifth Avenue, New York. E. A. Graham, formerly associated with the late Dr. Free, will manage the laboratories, which will be known as the Engineering and Research Division.

A. B. Carter, Inc., Gastonia, N. C., announces that Lamar Rankin has joined the organization as salesman, to cover part of North Carolina. Mr. Rankin is a native of Gastonia and has been with the Hanover Mills for more than 15 years.

Racks of fluorescent lamps are being constantly filled, tested and emptied at General Electric Fluorescent Lamp Works, Nela Park, where increased production has made possible a list-price reduction averaging 15%, effective March 1. Twelve thousand lamps a day are now passing through this "ageing" test.

Textile Machine Works, Reading, Pa., is about to enlarge and modernize its steam-heating plant. Day & Zimmerman are the engineers; cost is $200,000; to be finished early next fall.

Hercules Powder Co., which some years ago acquired the Providence (R. I.) Dry Salters Co. and operated it as the "Dry Salters Division", has consolidated it with the "Synthetics Division."

Westinghouse Lamp Division, Westinghouse Electric & Mfg. Co., Bloomfield, N. J., has issued a new and reduced price list covering 38 fluorescent and incandescent lamps, effective Mar. 1.

Reliance Electric & Engineering Co., Cleveland, Ohio, has transferred George E. Law, formerly in the application engineering department to the company's Chicago office as a sales engineer.

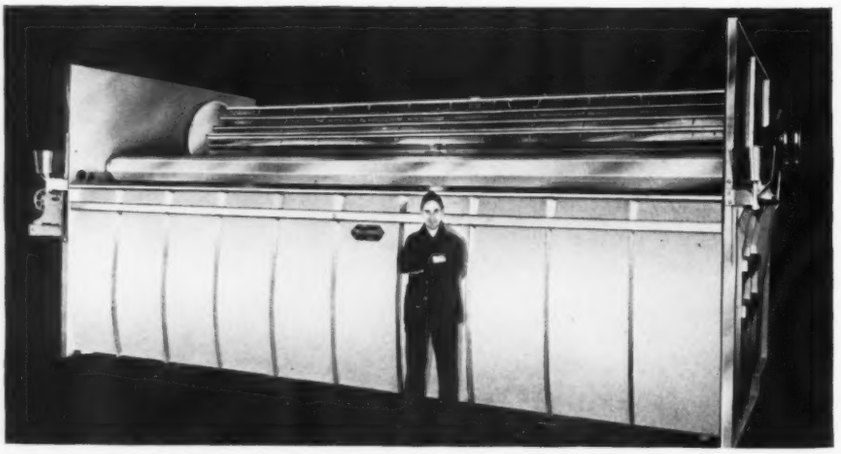
Tide Water Associated Oil Co. has set up a southern branch office and warehouse at 1122 South Boulevard, Charlotte, N. C. R. H. Mariner is regional manager, and W. H. Young, Jr., will assist him in a sales capacity.

Pennsylvania Salt Mfg. Co., Philadelphia, has appointed Richard L. Davies as manager of its newly established Market Research Department.

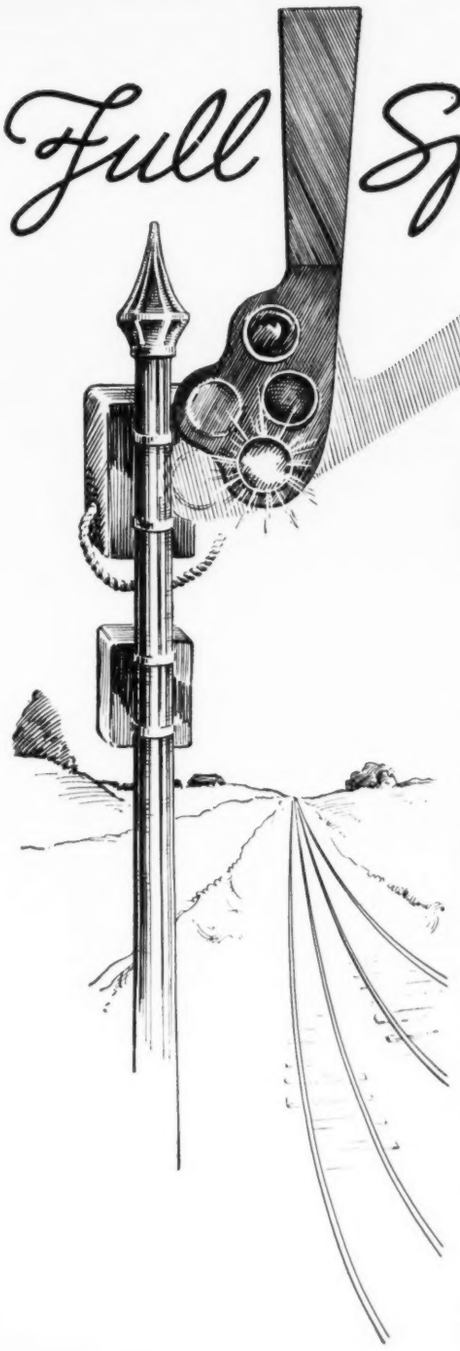
Sandoz Chemical Works, Inc., has appointed Arthur Barker to head the newly established Chicago branch.

"Dollars and Census"

The Industrial Rayon Corp. has mailed to knit underwear buyers a striking and helpful promotion booklet with the intriguing title "Dollars and Census." This is census year, states the booklet, and time for a buyer to take his own census. Customers are different and it is necessary to step up the whole tempo of the department; promotions must therefore be different. The company follows through on this by presenting in the booklet a series of new and effective ideas for promotions. "Let this brief census be the means of pointing the way for more dollars for your department," is the suggestion.



Rodney Hunt Machine Co. has recently sold to Botany Worsted Mills what is said to be the largest stainless steel dyeing machine ever built. The machine is 20-ft. long, of 6,000-gal. capacity, and is designed to handle between 30 and 50 pieces of cloth at one time.



Full Speed AHEAD... *with* CAUTION

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However, we cannot stop forward progress on that account.

While operating at full speed ahead, Sonoco continues their time honored policy of constant and deliberate preparations to meet and anticipate every eventuality that will maintain and improve service to their customers.

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FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Abrasion Machine. Alfred Suter. Bulletin No. 4001 illustrates and describes the abrasion meter offered by this concern. Included are a series of photographs showing application of samples to the machine, and pictures of samples after testing.

Bobbins. Draper Corp. The facilities of this company for bobbin manufacture are described with words and pictures in the 20-page February, 1940, issue of *Cotton Chats*.

Magnifiers. Bausch & Lomb Optical Co. Magnifiers and readers of various types, including textile pick glasses, are described and pictured in catalog I-15.

Motor Bases. American Pulley Co. Bulletin MB38A describes this company's tension-control motor bases, and includes photographs of several installations.

Lighting Unit. Wheeler Reflector Co. Company's fluorescent lighting unit which accommodates twin 48-in. lamp units and incorporates Tulamp ballast equipment is described in Bulletin No. 63, which includes data on light output, power consumption, mounting and spacing, etc.

Motor Generators. Reliance Electric & Engineering Co. Bulletin 502 pictures and describes comany's motor generator sets for a variety of services.

Welding. Linde Air Products Co. Chart 4464 is guide for welding 30 different metals and alloys; includes recommended welding methods, flame adjustment, welding rod, and flux.

Valves. Jenkins Bros. 36-page data book gives information on specifying valves for use in connection with boilers, engines, turbines, diesels, pumps, heaters, and related equipment.

Industrial Equipment. Allis-Chalmers Mfg. Co. Bulletin No. B-6057 is a complete directory of engineering literature and bulletins available on 1,610 different products manufactured by this company.

Spray Painting. DeVilbiss Co. Catalog DG illustrates and describes a number of types of spray guns, as well as a wide variety of auxiliary equipment such as hose, spray booths, compressors.

Pyrometer. Wheelco Instruments Co. 4-page leaflet describes company's Series 2850 surface-temperature pyrometer for precise readings of temperatures of all types of surfaces.

Electrical Alloys. Driver-Harris Co. Data Book R-40 contains 56 pages of information regarding company's electrical heat and corrosion resisting alloys for a variety of services.

Ball-Bearing Units. Stephens-Adamson Mfg. Co. Company's line of ball-bearing pillow blocks, flange units, and take-up units are discussed in Catalog 739, which contains technical data on dimensions, load capacity, and other factors.

Wire Gage. Babcock & Wilcox Tube Co. Decimal equivalents in average wall and minimum wall for fractional inches, and Birmingham wire gage are contained on handy letter-size technical data card No. 3.

Drainers. Cochrane Corp. Company's Multiport drainer for continuous removal of large quantities of condensate under vacuum or positive pressures are described in Bulletin 2925.

Electrical Equipment. Ideal Commutator Dresser Co. Illustrated catalog lists and describes briefly wide variety of electrical and maintenance equipment made by this company.

Resurfacing Compound. Flexrock Co. Acid-resistant floor resurfacer is described in a 4-page folder; included are before-and-after photographs taken in textile-mill dyehouse.

Cleaning Compound. Quigley Co., Inc. Pocket-size bulletin No. AN-129 describes briefly properties, uses, adaptability, etc. of company's cleanser.

Water Conditioning. Permutit Co. Company's master pilot valve for controlling cyclic process operations, and uses to which it may be put, are described in Leaflet 2279.

Throwing Equipment. Atwood Machine Co. February, 1940, issue of *Atwood Twists* pictures and describes company's over-end delivery for twisting equipment; points out its advantages and the ease with which regular twisters can be converted to over-end delivery.

Conveyors. Link-Belt Co. 48-page booklet No. 1700 includes illustrations and brief descriptions of uses of company's materials-handling equipment in a variety of services; textile applications include woolen bleaching, rag picking, and such general industrial services as coal transportation, package conveying, etc.

Sewing Machines. Union Special Machine Co. February, 1940, issue of *The Needle's Eye* contains, in addition to other material, an article describing and picturing plant modernization at Globe Underwear Co.

Dyeing Equipment. Calco Chemical Division, American Cyanamid Co. Technical Bulletin 546 describes and diagrams, in 20 pages, "Machinery Used in the Application of Dyes to Cellulosic Fibers."

Strapping. Acme Steel Co. 4-page leaflet, No. AD14, contains a number of sketches showing how various products can be effectively and economically strapped against pilferage and damage.

Casters, Wheels, etc. Darnell Corp. Ltd. Booklet No. 38 contains nearly 200 pages of technical data on company's lines of casters, wheels, gliders, etc.; included are data on dimensions, specifications, prices, and other factors.

Roller Chain. Morse Chain Co. Bulletin R54 contains detailed information on construction, capacities, and application of company's roller chains. Included are tables showing chain capacity, sprocket dimensions, and types; data on proper chain-drive layouts, guide for calculation of chain lengths, etc.

Control Equipment. Bristol Co. 50th anniversary publication describes company's achievements in field of control and recording instruments, its facilities for servicing accounts, and a wide variety of instruments which are available.

Infra-Red Reflectors. Fostoria Pressed Steel Corp. Folder PS-5 describes company's reflectors developed to accommodate infra-red ray lamps, which are used in a variety of drying and baking processes; included is a short description of how infra-red rays are used in drying, and advantages they make possible.

Weaving Mechanisms. Crompton & Knowles Loom Works. Issue No. 10 of *Photo News* contains illustrations and brief descriptions of making high-speed motion pictures of looms in operation, and other interesting material.

Chemicals. Onyx Oil & Chemical Co. 36-page booklet describes company's surface-active substances known as "Xynomines"; considerable data on their chemical composition, characteristics, properties and uses are included. Several photographs and charts give information on test results, and other factors.

Extractor. Tolhurst Centrifugal Division, American Machine & Metals, Inc. In a 6-page folder, company's center-slung extractors are described and pictured, and information given on applications to which they are adapted.

Throwing Aid. Warwick Chemical Co. Bulletin describes company's product Glysorbine, a hydroscopic and plasticizing agent for use in silk throwing.

Dyeing Machine. Rodney Hunt Machine Co. A wide range of sizes and types of stainless-steel dyeing machines manufactured by this company is described in catalog No. 539, which contains data on special features built into these machines.

Clothroom Machinery. Hermas Machine Co. February, 1940, issue of *The Clothroom Spotlight* points out importance of increasing clothroom production and lowering costs in this department.

THE OVERSEERS' CORNER

A PETE AND BILL DISCUSSION

Reducing Labor Turnover

"Got to let six men go next week," remarked Bill one cold February day. "I feel pretty bad about it, but we're changing over to a new type of work and that crew is being eliminated. It's going to be tough on their families the rest of the winter."

"Why let them go, Bill?" asked Pete. "In my department I try to see that every worker knows more than one job. Then, when a changeover takes place, I just shift them somewhere else."

"My theory is that a man can't do more than one job well," said Bill. "You know a 'jack of all trades is master of none.' Besides, how's he going to learn more than one job? Not one out of a hundred will work after hours on his own time to learn a new job."

Pete looked at Bill almost pityingly. He said: "Sometimes you completely baffle me, Bill. A man of your experience and age saying that a man cannot do more than one job well! I agree it's hard to get the average worker to learn additional jobs on his own time, but I think I've solved that problem. I've persuaded the management to let the workers on short time make up the difference by learning other

"I feel pretty bad," said Bill one cold February day.

jobs at their regular rate of pay. Of course this costs the mill some money, but it is a lot cheaper than hiring and training a completely green hand. When a job ends, I simply shuffle those people into other jobs where there are openings. You never have too much good skilled labor."

It was Bill's time to look pained. "I never heard of such a thing. Running up your costs that way when you can always hire more trained workers than you need is perfectly foolish. I admit I hate to let a man go, but I can always find another one to run the next job that opens up."

How can labor turnover be reduced?

Letters From Readers

Company Pays the Bills

"Selling Villages"
Pete & Bill, Dec., 1939

Editor, Overseers' Corner:

Mill companies should not sell villages to employees for it enables them to hold good help. Though having its faults, a village is surely an advantage to both company and help. Because of their large-scale operations, more ample resources, and the fact they look to their plant, not the village, to return a profit, mills may break even on a rental less than would be the cost to the worker for taxes, insurance and repairs.

In 1918, my father, now deceased, moved into the house which I now occupy. Since then, it has been to all intents and purposes, our own, save that taxes, insurance and repairs were the company's worry, not ours. For me, ownership would be only a white elephant, its only advantage being the few hundred dollars I might realize at a forced sale. I would surely feel like an orphan child if forced to buy it or to rent from a small owner. Perhaps, as Pete suggests, the company-owned village is paternalistic, but if so—then our public school and highway systems are socialistic. Yet few of us would advocate their abolition in favor of the private school and toll road.

J. C. Norman (Sylacanuga, Ala.)

"Crank or Self-starter?" Asks Martha Jones

Editor, Overseers' Corner:

I am not an overseer, but I am an employee in a large textile mill in Alabama, and I think I know some of the problems that the overseer faces each day with the employees. I feel some of these problems are easy ones and some are not so easy. However, I believe most all of them could be made easier if the employees would look at a day's work like the overseer. In the first place, I realize that he understands his job, and did his best by it or he would have never reached the job of being overseer. He did his work as instructed, and a little more so.

Right here I would like to drop the word "boss" and think of the overseer as an instructor, for that is what he is as long as one does his job right. It is only when we shirk our duties toward our jobs that the overseer becomes a boss. There is the old saying: "Be a self starter, and your

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CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York.

boss won't be a crank," and I find this true.

Use the overseer for what he is put on his job for. When we become puzzled with our job, and the work don't run as smooth as it should, call on someone who knows and understands the job better than we do—the overseer.

We should remember the overseer has more than one job: his duties toward the employees, his self respect toward his company and his skilled knowledge of operating the machinery in his department and many other odd duties. When we employees have only one job, it is our duty to run it in the best manner we know how, so as to get production, workmanship, and have the company's interest in mind at all times. Should we have this thought before us continually we would never have to worry about what the overseer thinks of us. And our job, as well as the overseer's, would be a real pleasure to run.

MARTHA B. JONES, Battery Hand
Avondale Mills
Alexander City, Ala.

Give Beginners a Chance

"What Chance for Beginners", Pete & Bill, Jan. 1940

Editor, Overseers' Corner:

I am of the same opinion as Pete in regard to liberties given learners. I believe in allowing young beginners who work hard to try to get their own work done in time to be able to help those who have more responsible jobs. In order that they may obtain the experience themselves this is well worth any trouble that may develop. They will eventually compensate by being able to pinch hit for an experienced worker as well as fill such a position themselves if the occasion presents itself. I have found from experience that any young man who wants to better himself will work much harder knowing that he is being given the opportunity to do so.

PETER C. WAYNER, (*Taunton, Mass.*)

The quaint character shown above has proven a painless, effective solution to one of industry's paramount operating problems — promoting safety and efficiency through plant cleanliness. "Sloppy Sam" is the brain-child of the Plant Inspection Committee in the Buffalo, N. Y., steel service plant of Joseph T. Ryerson & Son, Inc. Sam is given lodging in departments proclaimed sub-standard by the Committee during their weekly inspection tours. His visits evoke good-natured chiding from members of other departments who in turn make a definite effort to keep their departments clean so the unwelcome visitor will have no reason to call on them. The results of this humorous approach to the cleanliness problem were so favorable that duplicates of Sam were made for the company's other plants. The figures are flame-cut by Ryerson from rolled steel plate and painted in bizarre colors.

Overseers' Practical Helps

Check Fire Extinguishers for Possible Damage from Freezing

A warning that the extremely low temperatures experienced during January have seriously damaged certain types of fire extinguishers has been issued by Fred Shepperd, manager of the International Association of Fire Chiefs. This damage has been extensive in the South.

He urges that all soda-acid and foam extinguishers that might have been frozen be inspected at once so as to eliminate damaged appliances and restore fire protection. The damage done to soda-acid extinguishers by freezing usually can be detected, but foam extinguishers should be opened to make sure that the inner container has not been crushed. Anti-freeze and vaporizing-liquid types of extinguishers are not likely to be effected by the cold, as they can withstand temperatures of 40° below zero.

Loss of Production on Narrow-Fabric Looms

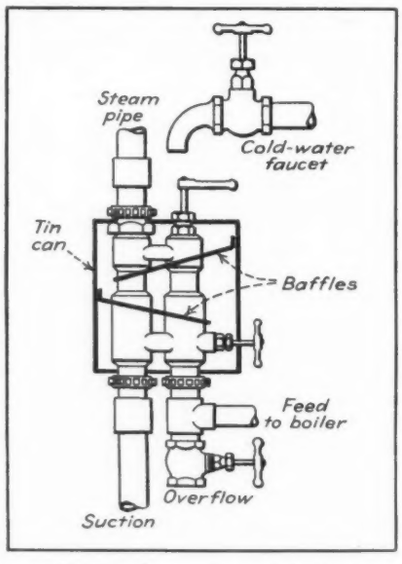
Sometimes, excess slippage on ribbon and other narrow-fabric looms slows the looms down and robs them of a portion of their production. The first step in eliminating such a condition is to determine what the picks per minute of the loom would be if there were no slippage. This can easily be calculated by the following formula: Motor r.p.m. × diam. of pulley on motor shaft ÷ diam. of driven pulley × teeth in gear on same shaft ÷ teeth in gear with which this meshes (which is connected by a lever to the lay of the loom).

After you have calculated the theoretical picks per minute, check the loom with a watch and get the actual picks per minute. If the two do not correspond, you are losing production. The two most likely causes of this are a loose belt, or use of improper belt dressing. If the former seems to be the case, tighten the belt; if the latter is at fault, apply proper belt dressing.

—MELVIN SIEGEL (*New York*)

Home-Made Cooler for Injector

In a small hosiery mill, one of my duties was to fire the boiler. The only means of keeping water in this boiler was with an injector, which raised water from a small well in the boiler room directly underneath the injector. The condensate from the heating system and the drying forms was run into this well, and the mixture frequently got too hot for the injector to handle. Of course, we should have had an automatic pump and receiver to return the condensate to the boiler as it accumulated. But, it was necessary to make the best of what we had.



Device for cooling injector

We tried running a stream of cold water on the feed-water apparatus from a faucet above, but the water ran off the

surface before it had properly done its work. To prevent this running off, it occurred to me that I could make a water jacket for the injector out of a small rectangular can which had contained dyestuff. I cut two holes in the bottom of the can, slightly larger than the overflow and suction pipes, and left the top open. Then I cut in half the bottom out of another can of the same size, to make two baffle walls. These were cut through the center to fit over the injector, turned up at one edge, and soldered one on either side of the inside of the can.

Now when the injector refuses to raise the hot water, I just give the faucet valve a turn, and it is almost instantly cool enough to operate.

—E. L. B. (*North Carolina*)

"Born Under a Spinning Frame"

OF COURSE J. F. Brasch, superintendent of Grantville Mills, down in Georgia, was not actually born under a spinning frame, although some people who know his story say he must have been.

His parents were well-to-do rice planters before the war between the States. After the war all they had were the clothes on their backs. J. F. was born Aug. 19, 1871. He was little more than a baby when his father died and left him with a widowed mother and a half-blind sister to take care of. So he went to work in the cotton mills at Columbus, Ga.

He spent seven years in those mills. Then he transferred to the Chattahooche Knitting Mills, where, in eight years, he worked up from knitter to assistant superintendent. His next job was in a knitting machine factory in Providence, R. I. There he not only learned how to build machines, but many other useful things.

It was 42 years ago that he went to Grantville, and he has had over 60 years of work to his credit. In all those years he had no chance to attend school. He never was inside a schoolhouse. Good books have been his teachers. He enjoys history, travel and biography.

In mathematics, he says, he isn't so "hot," but give him a rule, square and dividers and he can work out almost any problem pertaining to the building of machinery.

He has been married 38 years and is proud of his four daughters and two sons, all of whom have had college training.

Here is an American of whom all of us have every reason to be proud. He has made his contribution to the country. His childhood days were hard and bitter. Only his strength of body and character carried him through. Not once has he asked for special favors. He has worked hard for whatever life has given him.

We salute him as a splendid American—a man whose example should be an inspiration to youngsters everywhere. We hope none of today's children will suffer as he did, but we also hope that all of them will achieve his kind of personal success as men and women of character and true worth."

[EDITOR'S NOTE: This personality sketch of J. F. Brasch appeared in the January issue of *The Howard Way*, published by Howard Bros. Mfg. Co., Worcester, Mass. It interested us so much that we asked for permission to republish it here. We also tried to get a picture of Mr. Brasch, but he replied to our request as follows:

"I regret to say that I haven't a photograph or snapshot of myself. Had one made 20 years ago but the machine exploded and I have been afraid of them since. This company has taken TEXTILE WORLD for many years and there is very little I miss reading. Indeed, I have derived much help in my business from the different articles therein. I have been with this company since its infancy—42 years ago, counting a copy a month that makes 500 copies I have read.

Our reply to this was that we would forgive Mr. Brasch for not sending his picture if he would let us risk our camera on him the next time we are in Grantville. We also pointed out that he has read far more than 500 TEXTILE WORLD's in 42 years since prior to June 1932 the magazine was issued weekly.

Increases Hosiery Production

By simple change in pattern chain suggested by a resourceful fixer

By I. C. MOORE

TO MAINTAIN circular hosiery machines to best advantage, it is not enough for a fixer to know that turning a certain screw will tighten or loosen the stitch, or that setting and timing the machine a certain way will give best results. The progressive fixer is not satisfied until he knows the reason why —he does not just take theories for granted. Only after he has verified even what is considered standard practice does he accept it as the procedure which will result in the best performance of his machines.

Of course, hosiery machines are designed and built by engineers who know their business, and it is almost assured that a new machine can be depended upon to operate at the highest mechanical efficiency. Even so, once in a great while, it is possible that an alert fixer will discover some simple change which will permit even better results. This was the case not long ago in a large southern hosiery mill.

A resourceful fixer, of the type who wants to have the functions of every detail of his machines demonstrated to his satisfaction, had been working on a spiral float-stitch machine that was leaving holes along the gore lines in the heel and toe of the sock. After making a minor adjustment, so that the narrowing picks could engage the narrowing needles normally, he started the machine. While watching the machine knit the next sock to make sure that the trouble was remedied, he noticed that it rotated at full-speed until the change to the oscillating motion for knitting the

heel. But, to his amazement, the main pattern chain, just before the foot was finished, shifted the belt to the slow pulley, and the machine ran at reduced speed for two lengths of the chain before beginning to knit the toe. He could see no reason for this, as the machine did not slow up before it began knitting the heel, which was knit in exactly the same manner as the toe. At first he thought that possibly the reduced speed was to allow the yarn finger time to lay in the yarn for the ring-toe. However, on second thought, he remembered that the yarn fingers had plenty of time to lay in the striping yarns of the leg and foot with the machine going at full speed. He was convinced, therefore, that there could be no logical reason for this action.

By changing the link that controlled the knitting of the toe to conform with that of the heel, this slowing down near the end of the foot could be eliminated, and the production of the machine increased slightly. Although the increase would be of little consequence in the knitting of only a dozen socks, considering some 600 machines over a period of time, it would amount to a worthwhile saving.

However, a change such as this cannot be made by a fixer without the consent of the plant manager or superintendent. Accordingly, the proposed change was suggested to the superintendent. However, he felt it best not to authorize the fixer to tamper with the machines until he had consulted with a representative of the machinery manufacturers.

Eventually, the question was put up to a service man connected with the machinery company. He, in turn, referred the matter to his technical department; and, after due consideration, it was decided that there would be no harm in the fixer's making the small change in the main pattern chain.

Years ago, when practically all hosiery was plain knit, it was thought necessary to slow down the speed of the cylinder near the completion of the foot when the yarn was about to change from the main or body yarn to the toe yarn, in order to give the yarn fingers time to act. With the advent of fancy patterns, and the necessary reduced knitting speed, together with improvements of yarn-changing devices, further reduction of the speed near the completion of the foot became unnecessary. Hence, there was no reason why the chain should not be altered.

This simple adjustment of the build-up of the main pattern chain has, by increasing production, paid many times over for the slight expense of making the change.

Mixing and Blending Wools

Care and thoroughness necessary for successful subsequent processing

By WEBSTER NORRIS

WHEN CHOOSING among the materials at their command, blenders must pay attention to the features of different wools of similar quality, but obtained from varied sources, since there are important differences in fulling properties, color, etc., which are of considerable importance in the production of many types of fabrics. The price factor has also to be considered, as does the yield obtained from the materials, and the rate of output in the various processes.

Materials cheapest in first cost do not necessarily produce the fabrics at the lowest cost. Often, the greater weight of yarn obtained and the better production possible in many of the processes make it possible to spin less costly yarns from more expensive raw materials; and, in addition, to produce better fabrics.

Blending to produce fancy mixtures or ranges of blues, browns, grays, etc., is an art within an art. The blender is not dealing with dyes or pigments, but with colored fibers. When adding a bright color to a blend, it is advisable that this color be of slightly finer material than used for the ground color; if it is coarser, the finished cloth will likewise be coarser in appearance. When it is necessary to add a small quantity of a particular type or color of stock to a blend, it is advisable to mix this material with one, or part of one, of the other ingredients before adding it to the pile, as this assists in obtaining a more even mixing.

In woolen-mill preparatory departments the machines most frequently installed are willows, burr pickers, mixing pickers, and fearnaught pickers, although conditions may dictate use of only two or three of the machines named. All of these machines are capable of producing considerable quantities per hour, depending somewhat on the type of material being processed. However, in many cases the machines are standing idle for long periods, only one being in operation at a time. This should be avoided as much as is feasible.

The willow is useful for giving a preliminary opening to the material, and it is an excellent machine for cleaning dirty wools, particularly if fitted with a dust-extracting fan. Although the machine is usually run continuously when used for a light preliminary opening of the stock, better cleaning takes place when the feed of the machine operates intermittently. The burr picker's name suggests its use, and all wools that contain burrs which may give trouble in later processes should be given a run through it. The fearnaught picker opens the material further than the willow, but has not such good cleaning properties. It also has a more drastic action on the material than either willows or regular mixing pickers; and if the stock is passed through the machine too often, some fiber breakage may take place, with consequent loss of strength in the spun yarn.

IN BLENDING, correct and careful piling is the basis necessary for evenly mixed blends. Each layer of stock should be of the same thickness throughout, and it should be remembered that a number of thin layers give better mixing than a few thick ones. In addition, all piles should be broken down vertically for feeding.

Where room is available and where large blends are dealt with, a system of working which does away with the manual work of building up the pile by hand can be adopted. In this system, the material is fed to the first mixing operation in the order in which it is to be piled. This machine delivers the stock directly to the hopper feed of a fearnaught picker. From this machine, the material is conveyed to one of several blending bins, which are built round the blending room. These bins are about 20 ft. square, and 20 to 25 ft. in height. Fitted into the roof of each is a rotary spreader which revolves, by reason of air currents and the material passing through, and spreads the material evenly on the floor of the bin. As the materials have been fed to the first machine in the order in which they need to be piled, the stock builds up in the blending bin in layers exactly the same as it would be if built up by hand. And, since the rotary blender revolves continuously, even spreading of the materials is obtained without risk of the various components becoming sorted.

When the pile is completed, workmen pass the material to the ducts which carry it to a second fearnaught or similar type of machine. At the conclusion of the last mixing operation the stock is passed forward, either to storage bins behind the cards or, if this is impractical, to exhaust cages where it is

All piles should be broken down vertically

packed into sheets. Where the system described is installed, oil may be added to the material as it passes over the feed lattice of either fearnaught, according to the nature of the blend which is being processed. An automatic oiling machine is used.

Cleaning is a problem in many mixing rooms. Much time is lost in cleaning up the room from one blend to another, particularly when a clean white has to be made in a room which has been used for colors. To reduce this time to a minimum, the room should be free from projecting corners; and the walls, floor, and ceiling should be smooth, so that there is no tendency for loose material to stick to them.

In Combination-Yarn Weaving

Careful throwing and conscientious loomfixing are most important attributes

By ARTHUR C. WAYMAN

GOOD WEAVING of combination-yarn fabrics begins in the throwing department. The designer or fabric technician also plays an important part, not always recognized, in the satisfactory weaving of combination-yarn fabrics. So, too, do warping and slashing departments exert an influence on how much and how good will be the quantity and quality of work turned out by the weave-shed.

Great care is required in the throwing of combination yarns, particularly with regard to proper tensions when plying. Uneven throwing take-up may cause corkscrew effects and also overstrain one end of the combination. Such conditions can result in excessive breakage during weaving and/or formation of skin-backs and similar defects. The possibility of such breakage is minimized when the strain during weaving is divided evenly between the two ends composing the combination.

The distribution of S- and Z-twist yarns varies widely in the numerous combination-yarn constructions, as do weaves used. It may be that S-twist yarn is used exclusively, in both warp and filling. Or, two-S, two-Z may be called for in warp and filling. Again, there may be a one-and-one arrangement in the warp and a two-and-two in the filling.

While a large percentage of combination yarn fabrics are woven with a plain weave on four harnesses, or a two-and-two basket weave, there are also numerous fancy draws and chains used to produce various broken-up patterns. Careful attention must be given to ascertaining that both the yarns and the weave will both give the desired effect and weave satisfactorily.

In warping, whether on the cotton or silk system, mills should make sure all parts with which yarn comes in contact are smooth and in good operating condition. On the silk system, the angle at which the yarn runs in from the creel should be reduced as much as possible. Due to the large spools used, only every other spindle can carry a spool. This, of course, reduces the number of ends per section and increases the number of sections per warp. Where space permits, two creels can be placed one behind the other and ends drawn in alternatingly.

Warps should be as long as possible, and, due to the comparatively low number of ends per warp, it may be worth while to twist-in at the loom. Some mills find it helpful to add a few extra ends to each warp; these are used in place of any imperfect ends which have to be removed, instead of using ends from bobbins, as it is frequently difficult to tension such bobbins equally.

Uniform tension of both warp and filling is of great importance. Since it is necessary to use temples, tensions should be so adjusted as to reduce take-up in width to a minimum.

Due to the large size of combination yarns, it is desirable to tie as few knots as possible, as quite often skin-backs are started at knots. Where knots are tied, they should be of the flat type; these have a better chance of passing through reed and harness without damage.

Combination yarns should be handled very carefully in the weave shed. The slightest bruise may result in breakage during weaving, and the yarns are very sensitive to abuse. Bent spindles on quill boards, which permit two adjoining quills to touch, are sufficient to produce filling skin-backs. Improperly lined up shuttle spindles, as well as rough quills, can cause similar defects, and also broken picks. Shuttles flying crooked, which ordinarily would produce shuttle marks, can injure acetate ends sufficiently to cause warp skin-backs. Cut or damaged heddles or drop wires should not be used. This applies principally to mills running crepe warps extensively, since hard-twist yarns are more likely to damage heddle eyes. All equipment should be examined carefully and frequently, to make sure it is in first-class condition.

Mills having ordinary 2 x 1 box looms will find it advantageous to supply weavers with one or two extra shuttles per loom, since quills of combination yarn do not run very long. Weavers with non-automatic looms can handle efficiently about six looms, provided they have the extra shuttles just mentioned. Weavers should have closed-eye shuttle hooks, instead of the regular type, as the latter have a tendency to become caught on shuttle fur.

After a new warp has been started, a swatch should be cut from it and cross-dyed. This will reveal any mixture of yarns. Also, such defects as slack twist, either in the crepe or the ply, and damaged ends will show up clearly. Where both S- and Z-twist yarns are used, incorrect arrangements can easily be detected. Prompt location of warp defects will be assisted by overstretching the boil-off swatch in drying, so it is equal to the loom width of the fabric being woven. By placing this swatch parallel to the reed, mistakes can readily be located.

Good lighting is another important factor in combination-yarn weaving. Nothing is more annoying to a weaver than having to open the twist in order to ascertain its direction, instead of being able to judge it quickly by the tint of the yarn. Also, of course, time so spent cuts his production.

Weave-room humidity and tempera-

ture depend largely upon the type of yarn used. While most combinations are made of viscose and acetate, there are also some all-viscose types. Whatever the case, the brands of yarn and the composition of twist have considerable bearing on most desirable atmospheric conditions.

Soaping Machine

Aids uniform preparation of woolens and worsteds for fulling or washing

By DAVID WELSH

MANY MILLS go along for years without a machine for soaping up woolens or worsteds for the fulling mill or washer. Some finishers say they wouldn't use one if they had it. Many of these men dislike a soaping machine simply because the usual methods of supplying it with soap solution are very crude. Actually, the soaper has many advantages over the hand-and-pail method of applying soap solutions to goods in the fulling mill or cloth washer. The soaper can be so adjusted that the correct amount of soap is applied to every yard of each piece, no matter how the yardage may vary from the loom. A 50-yd. piece gets the same amount of soap per yard as an 80-yd. piece, thus doing away with the usual guessing about soap for pieces of different lengths.

Another advantage of the soaping machine is the quicker loading of the fulling mill or washer. At the fulling mill it is never necessary to have a man stand at the back of the machine to push the cloth down while the fuller is loading it at the front or pouring on the soap. At the soaper the goods are easily and quickly loaded and settle down in the bottom of the washer, thus avoiding many tangles. They are ready to start as soon as the ends are sewed together, and it is easy to add a few pailfuls of soap if required to work up the necessary lather. If the goods for the washer are folded on to trucks in the sewing room with the ends of each cut hanging out half a yard, the pieces can be fastened together with a long needle with a wooden handle and a tape or cord 30 in. long having a knot in one end. It is necessary to fasten together only a 24-in. width midway between the selvages. The pieces will pull through the soaper, and the tape or cord can be quickly pulled out for further use. With the pieces fastened together in this way, the soaper can be run continuously throughout a set or truck load.

UNIFORM SOAPING is of great benefit; with it, dry spots and streaks are unknown. Uneven or slow soaping, the real cause of dry places in fulling, causes all manner of blotchy and streaky imperfections, especially on black-and-white herring-bone patterns. No amount of aftertreatment can eliminate these defects, although the examiner—if he is a good artist and can spare the time—may manage to make a piece passable that would otherwise be classified as a second.

On woolen suitings uneven soaping will cause streaks and blotchy, cloudy places somewhat different in color from the rest of the piece. Heavier fabrics, such as woolen or mohair overcoatings, will be cockled, as the dry spots fail to shrink up like the balance of the piece. After the goods are napped, these cockles or bubbles will stand out and may be cut with the wire or slit later at the shearing machine.

Figs. 1 and 2 show a battery of four soap tanks in a low-ceilinged room (10 ft.). Two tanks are placed on the floor for easy handling of soap and soda ash or other ingredients and proper attention to the boiling of the soap. A soap pump is used to pump the solution to the two upper tanks which supply the soaper. With this arrangement, a plentiful supply of soap is available at all times. If the ceiling is high enough, all the tanks can be elevated and soap boiled in each tank as soon as it is emptied. Of course, this entails the extra labor of getting the supplies up and into the tanks and continual running up and down to see how the boil is progressing.

The valve between supply tanks and the soaper can be set to give a continuous flow of soap solution to the machine in order to keep the soaper nearly full at all times. Pipes leading from the soap tanks to the soaper should be 4 in. in diameter. A ½-in. steam pipe should be inserted in the section of the soap line in front of the tanks and should run the whole length of that section. This ½-in. pipe is fitted with inlet and outlet valves so that steam can be turned on whenever the heavy soap solution congeals in the pipe.

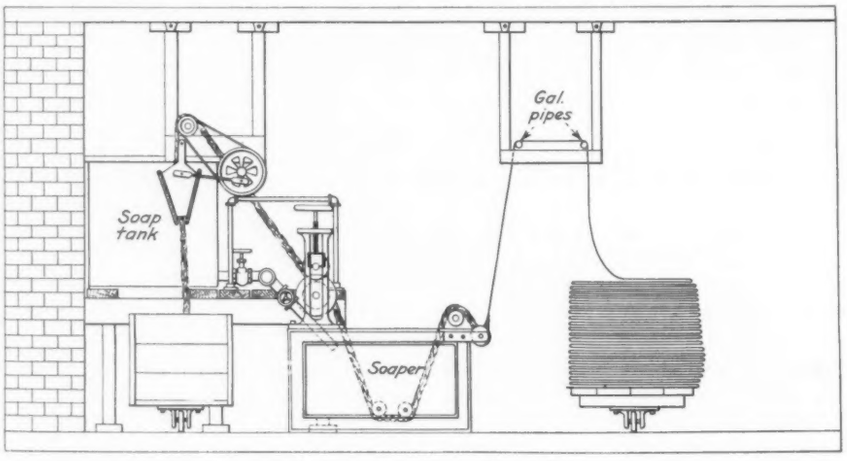


Fig. 1. Elevated soap tanks and soaper

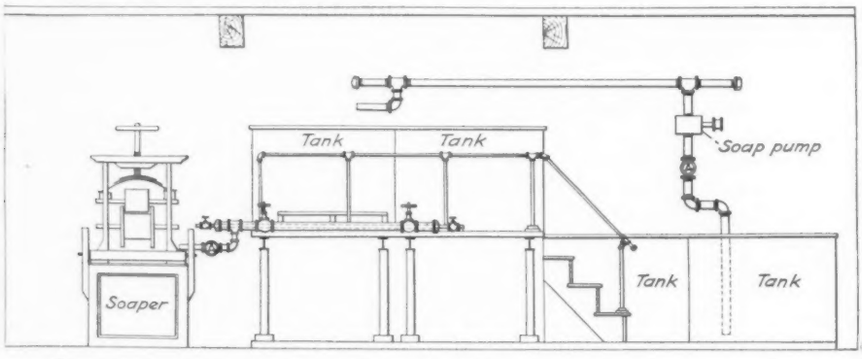


Fig. 2. Arrangement of soap tanks and soaper in low-ceiling room

QUESTIONS & ANSWERS

Speeds for Spinning Experiments

Technical Editor:

We are planning to do some experimental work in spinning of 90s hosiery yarn, using cotton of 1⅜ and 1½ in. staple length. Combed 17- to 18-hank roving is to be used in the spinning creel. We plan to use twist multipliers of 3.00, 3.75, and 4.50. All yarn will be mercerized and gassed. Our question is, what size rings and travelers, and what front roll and spindle speed, should be used. We will greatly appreciate any information you can give us. (8701)

Normal spinning speed for 90s yarn made from 1⅜-in. staple with 3.75 twist multiplier, should not exceed 9,000 r.p.m., and for ordinary spinning frames the rings should be of 1½-in. diameter. If the rings are in good condition, a 14s traveler should allow the yarn to stand up well. If a larger ring is utilized, or if the rings are relatively new, a lighter traveler will be suitable. If the rings are badly worn, it will be useless to try to make good yarn on them. Separators should not be used. The percentage of waste taken out at the combing process should be fairly high, not below 20%.

Based on 9,000 r.p.m. of spindles and the 3.75 twist multiplier, the roll delivery will be around 280 in. per min. If possible, it would be better to spin such long staple on front and back rolls of 1⅛-in. diameter; middle rollers should be ⅞ in. in diameter. Middle and back top rolls should be self-weighted.

The 90s yarn to be made from 1½-in. staple with a 3.00 twist multiplier will probably require a lighter traveler, possibly an 18s. It will also be advisable to reduce the spindle speed to around 8,500 r.p.m., to avoid too much breakage. Better spinning may be obtained on this low-twist multiplier by taking out a higher percentage of waste at the comber.

For the yarn made from 1½-in. staple with a 3.75 twist multiplier, the same rules as for the 1⅜-in. staple may apply, though possibly a slightly heavier traveler may be needed.

When applying the 4.50 twist multiplier, it may be possible to use spindle speed up to 9,500 r.p.m., though when quality is desired, high production must to a certain extent be sacrificed, and it might be as well not to increase the spindle speed beyond 9,000 r.p.m. and to wind a tighter bobbin by using a heavier traveler.

Atmospheric conditions play an important part on fine counts; 65% relative humidity and a temperature of 84° F. will probably give good results. The high temperature renders the fiber-wax pliable in the drafting process; this results in greater yarn strength.

Raceplate Covering

Technical Editor:

Please advise which of the following is, in your opinion, the best material to use as a covering on the raceplate of a loom when weaving high-count acetate satin: (1) billiard cloth, (2) corduroy, (3) plush with a rubberized backing. If there is some other material which you feel is superior to any of the above for this purpose, we would appreciate your advising us. (8698)

We believe you will find corduroy to be a very satisfactory raceplate covering when weaving fabrics of the type described. In placing the corduroy upon the raceplate, be sure all old glue is first removed. Then, spread a thin sheet of new glue on one-half the width of the raceplate, fasten the cloth to this, apply glue to the other half of the raceplate, and attach the cloth to it. It is advisable to use care in applying glue to the raceplate, as too much glue on the back edge of the cloth may cause numerous break outs and chafed warp yarn.

One reason for quick wearing of raceplate covering is a low shed which allows the warp ends to ride on the lay. Keep the ends up off the lay, so that the yarn barely touches the cloth. If the top of the shed is too high, adjust the opening on the head motion.

Setting Twist in Mohair

Technical Editor:

We should like to know the best temperature and humidity for setting twist in mohair yarn. We have heard many conflicting theories as to how this should be done. One is that this yarn is allowed to sit around in a humidified room for anywhere from four to seven days; another, that it is steamed quite successfully in a machine which introduces live low-pressure steam in the material. We have also been told that due to the nature of the oils used in mohair yarn the usual temperature for conditioning does not exceed over 120° F. and in no case should it be over 150° F. You can readily appreciate that if it is correct that due to the nature of the oils used in the preparation of the yarn, yellowing will result at high temperatures, it would seem practically impossible to apply live steam to it. (8568)

When yarn is artificially conditioned on the bobbin, it is difficult, if not impossible, to obtain an equal distribution of the moisture. The outside layers receive most and readily shrink and curl, thus preventing penetration and absorption of the moisture. Even if the moisture penetrates to the inside layers, the fibers cannot shrink or curl to the same degree; hence any physical change induced is less pronounced in the inner layers. If heat or steam is used, there may be a chemical variation in the yarn, because heat readily acts on some oils used as fiber lubricants. Another factor is that the heat makes the yarn more plastic, and the pressure of one layer of yarn upon another will have a tendency to set the fibers in position. Although some mills are conditioning with steam, the general opinion favors natural conditioning. Some mills, as stated in your inquiry, are successful in their method of conditioning yarn in a humidified room.

The efficiency of conditioning depends upon the rate of penetration and the rate of absorption. Apparently, the rate of absorption is not increased by the use of high temperatures. Hartshorne states that "for a given relative humidity, the regain is less at the higher temperatures, but not less in a constant ratio." The advantage of a high temperature is that penetration increases, which compensates for the slower rate of absorption on the outer layers of the bobbin. The method of storing the yarn in the conditioning room is important. Use of small boxes, with perforated sides and bottoms, set on racks should aid circulation and absorption. If large trucks are used, there should be a perforated central division, in addition to the usual perforated sides and bottom.

Sound theory suggests the following procedure to minimize the faults arising when yarn is artificially conditioned: *a*—rustless, perforated metal bobbins; *b*—double-cone package which would permit the use of headless bobbins; *c*—a conditioning machine which provides an endless apron from which pegs project, on which pegs the bobbins can be set in a vertical position, with air space all around each bobbin; *d*—temperature in conditioning chamber to be 75° F., relative humidity 85% (avoid dew point); *e*—bobbins of yarn to be of the same temperature as the conditioning chamber temperature, to avoid precipitation; *f*—regulation of the speed of the apron to insure a reasonable penetration; and *g*—storage of conditioned bobbins in a room similarly conditioned until proper penetration and "set" of the yarn has been obtained.

With such a machine, aided by the

proper type of perforated conditioning tube, experiments might indicate the possible use of low-pressure steam, with very little effect upon the yarn as regards evenness of the conditioning. There may, however, be a change in color because of the action of the heat upon the oils or emulsions, or both, which are in the yarn.

The subject of conditioning needs a great deal of scientific study. Hence the above remarks should be considered merely as opinions and not as proved statements of fact.

Knitting Woolen Sweaters

Technical Editor:

We are spinning 5.3 typp (3.3 run, 17.73 cut) woolen yarn, with 18 holes of twist, and want to knit it into sweater coats weighing about 12 lbs., standard measurements. We plan to use a 17-in. spreader with a 17-in., 8-cut Cooper rib-knit machine. Should we use this size spreader; if not, what size would be correct? Also, how many stitches per inch should we use? How long should the cloth be washed or fulled in order to preserve the elasticity? (8697)

No absolute figures can be relied upon in yarn calculations because of variability of spinning conditions. The yarn is the correct size for a 6-cut latch-needle rib machine, but should also run well on an 8-cut Cooper rib machine. Theory indicates 13.2 wales per in., but in practice the fabric probably would have 12 wales per in., and 12 or 14 courses per in.

A 17-in. Cooper rib machine with an 8-cut cylinder has about 427 needles. Four hundred twenty-seven needles ÷ 13 wales per in. = 33-in. fabric. Thus a 17-in. drying spreader is correct. However, yarn of the size in question would probably completely fill the gage of an 8-cut Cooper rib machine, so that the fabric will have only 12 wales per in. In this case, a 17½-in. spreader would fill the tube, and should therefore be used.

If the elasticity of the fabric is to be preserved, fulling should be avoided. Wash with a good full-bodied soap for 15 min., or long enough to saponify the greases. Temperature of the bath should be not over 120° F. Then rinse at the same, or a lower, temperature.

Warp Streaks in Rayon Twill

Technical Editor:

Inclosed are samples of lining material which have lines running across the surface of the cloth. These show up in various degrees, depending on the way the light falls onto the goods. The creases come from the wind-up on the loom, but we think it hardly possible to have at this particular point a perfect wind-up, eliminating all wrinkles. The creases are hard set and retain their form no matter what treatment we give the pieces.

We process the pieces (54 in. wide) in 10-piece batches weighing about 260 lb. per lot. The goods are singed, desized on the jig, straightened out over the tenter and Palmer, and then put on the jig for dyeing. After dyeing, we again frame and Palmer the pieces. Our boil-off process is simple enough. We are using 0.25% of trisodium phosphate and 5% of a sulphonated oil. In dyeing we are using 5% of the same oil and 2% olive oil soap. We have tried various concentrations of caustic soda or caustic potash as pretreatment. In no case have the cracks been eliminated. Increase in dyeing time, increase of oils and fats in the dyeing liquor, and similar measures have been without results. It would be of interest to us to hear of a remedy for this condition, if there is any. (8627)

For production numbers the samples show excellent weaving and the material is commercially perfect in regard to the "cracked" appearance. The faint lines crosswise show the repeat marks of the 3-harness twill weave, and cannot be eliminated as they are due to the nature of the weave. The greatest amount of lines showing up in the cloth run warpwise of the material. These can come from several sources: reeds, warp sizing, inferior yarn, blending several yarn lots, or in the tentering and Palmering process.

If the reeds are in a strained condition from constant use, they should be replaced by new reeds. If pitch-band reeds are used, they should be placed into the reed bed so the reed can be moved with the touch of a finger at the bottom as well as the top. However, it appears unlikely the reed is the cause of the trouble, as some of the more pronounced cracks disappear within a few inches of where new cracks start. Likewise, the mixing of different yarn lots could be somewhat discounted for the same reason. The two most likely sources of possible trouble are therefore the sizing and tentering. Keep the warp sizing as soft as possible. If the sizing is too heavy, and cakes the warp yarns together so the ends are difficult to break apart before passing the first lease rod on the loom, the cloth will show heavy and light lines warpwise, somewhat similar to those in the samples. It might prove feasible to size a few warps very carefully for a test; then weave the pieces from these particular warps into lots of ten for processing by your usual methods. This should prove whether the sizing is at fault.

Another suggestion is to weave the cloth at least ½ in. wider and finish to the usual 54 in. width. If the increase in cost is too undesirable, you might also experimentally process a lot ½ in. narrower. However, we believe you should carefully check the sizing process before making any of the other experiments mentioned.

There are several loom conditions which might cause these defects. One of the various types of creases is that which runs the full length of pieces from certain looms. This type of crease can be eliminated by polishing the steel roller on the front of the breast beam on looms so equipped or by having the center raised slightly and tapering off towards each side. Other creases are caused by overlapping of the take-up-drum covering, or by pieces of twine or other material sticking to the take-up drum. Such creases usually occur every turn of the drum.

As it is almost impossible to remove such crease marks after they have been formed, cloth inspectors should advise the weaving foreman or loomfixer at once whenever a piece showing such defects comes off the loom, so the trouble can be rectified. Also, when weavers remove a piece from a loom, the start of the new piece should be placed on the take-up roll carefully to avoid wrinkles at the start of the piece.

Calculating Beam Yardage

Technical Editor:

We will greatly appreciate any information you can give us as to how to calculate the amount of silk or rayon yarn that can be beamed on to a flange-head beam. (8699)

A theoretical method for calculating the amount of yarn that can be put on a beam is likely to be unsatisfactory, because of the many angles which must be taken into consideration; some of which vary from one weave shed to another.

For instance, as you know, beams have different diameter barrels; some mills use an apron at the start, which takes up a certain amount of yardage; other plants use cloth ribbons around the edge to build up the yarn to prevent tight edges; etc. In addition, both warper stretch and sizer stretch play an important part. Again some plants weight the yarn heavily to pack the beams tightly, while other plants endeavor to keep the warp just sufficiently tight to prevent the yarn from cutting through and causing looseness. The size of the yarn also plays an important part, as each succeeding turn of yarn on the beam will take its position between ends placed thereon in the previous turn, rather than directly over them—this results in beams containing coarse yarn filling up considerably more rapidly, since the yarns cannot fit as closely together.

If you can control all of these conditions in your own warping department, it should be possible to figure out a table of yardages on the basis of experience.

LOOMFIXERS' MANUAL

COTTON SECTION—Chapter VIII (Concluded) and Chapter IX

By IVAR MOBERG

Filling Stop-Motions

CLOTH DEFECTS caused by incorrectly adjusted filling stop-motions are nearly always of major importance. Some of the more serious defects are:

Open Places—If the stop-motion fails to stop the loom when the filling breaks, the partial vacuum in the wake of the shuttle may gradually draw the broken end of filling out of the shuttle until it catches in the shed and normal weaving resumes. With side-fork motions, the failure of the stop-motion may be due to: filling fork striking the fork grate, filling fork set so low the fork wires scrape on the bottom of the cut-out in the lay, collection of lint in the grate, too much play between knock-off lever and shipper handle, filling-fork loop riding on top of the filling-motion hook, filling-motion hook being too far advanced, filling fork binding in the slide.

With center filling stop-motions, the defect may be caused by: bent fork wires, lint collected in the bottom of the cut-out in the lay, fork striking the bottom of the cutout before the knock-off has descended far enough to engage the knock-off finger, filling-fork binding in its bearings, knock-off and/or knock-off finger worn so that they slip off one another, knock-off failing to push shield from elevated position, cam so far advanced it prevents knock-off from becoming engaged with knock-off finger, knock-off arm set so low it does not lift knock-off finger high enough.

Thin stripes—This defect may be caused by any of the conditions already mentioned, or by failure of the filling stop-motion to slacken up on the cloth when the filling breaks or runs out.

Broken picks—With side-fork filling stop-motions, this defect may be caused by: filling fork striking the grate and pinching the filling so that it becomes cut or weakened to such an extent that it pulls apart on the next pick, filling fork penetrating so deeply into the grate that the filling is broken by the strain, filling cam timed so early that the fork loop catches on the filling-motion hook before the filling has had a chance to lift it, filling fork so top-heavy that too great a strain is placed upon the filling, binding filling fork causing excessive strain on filling.

With center filling stop-motions, broken picks may be caused by: bent or crooked fork wires; too great spring pressure on the filling fork; cam so far ahead that the fork is raised before the fork wires clear the cloth, with the result that the last pick is picked up and broken; fork wires with sharp edges which cut the filling as they slide over it; filling cam set so early that the fork descends on the filling too soon, increasing the leverage to such an extent that it breaks the yarn; cam adjusted at so steep an incline that there is a tendency for the fork to snap into the cloth and cut the last pick; shuttle striking filling fork and snapping it upward so violently that it bounces heavily on the filling.

Pull ins—This defect occurs with side-fork filling stop-motions when the filling catches on the filling fork due to: filling fork set too high off the bottom of the cut-out, filling fork penetrating too deeply into the grate, too much power on the pick, shuttle rebounding in the box, insufficient tension on filling, unconditioned filling.

Center loops—This defect is caused by improper adjustment of the center fork, which results in a series of filling loops being raised in the center of the cloth. The most common causes are: too great spring pressure on the filling fork; cam so far advanced that the fork drops too soon on to the filling, which is unable properly to support the fork under the increased leverage; bent or crooked fork wires; fork wires extending too far toward the reed; insufficient tension on the filling; shuttle rebounding in the shuttle box; too much power on the pick; shuttle so striking the fork that it snaps back and strikes the filling so heavily that the latter gives way; knock-off striking the knock-off finger a glancing blow which does not stop the loom.

CHAPTER IX

Protector Motions

TO AVOID A SERIOUS SMASH when a shuttle for some reason fails to cross the loom completely on the pick, a protector motion which will prevent the reed from moving up to the fell of the cloth is necessary. Protector motions may be divided into three types: loose-reed, warp-release, and tight-reed. Loose-reed and warp-release protector motions are not much used in this country, and will therefore be discussed only briefly.

The loose-reed motion has an arrange-

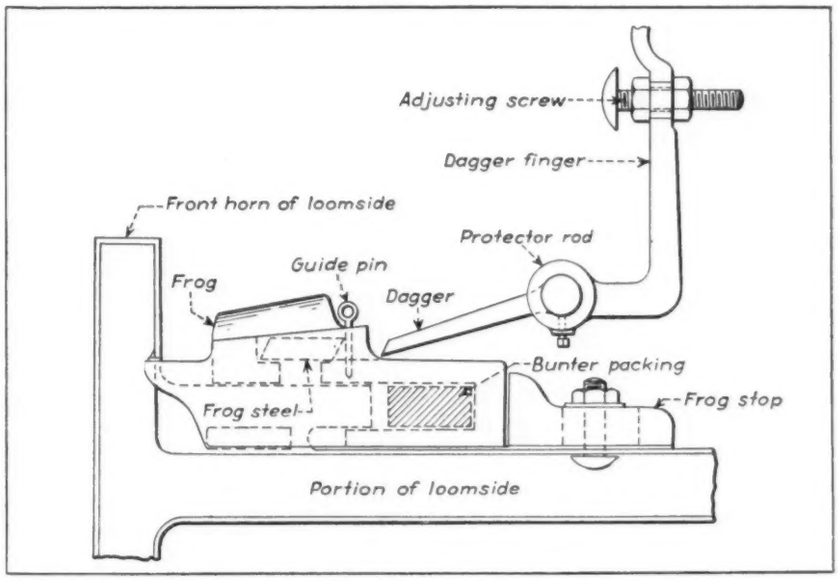
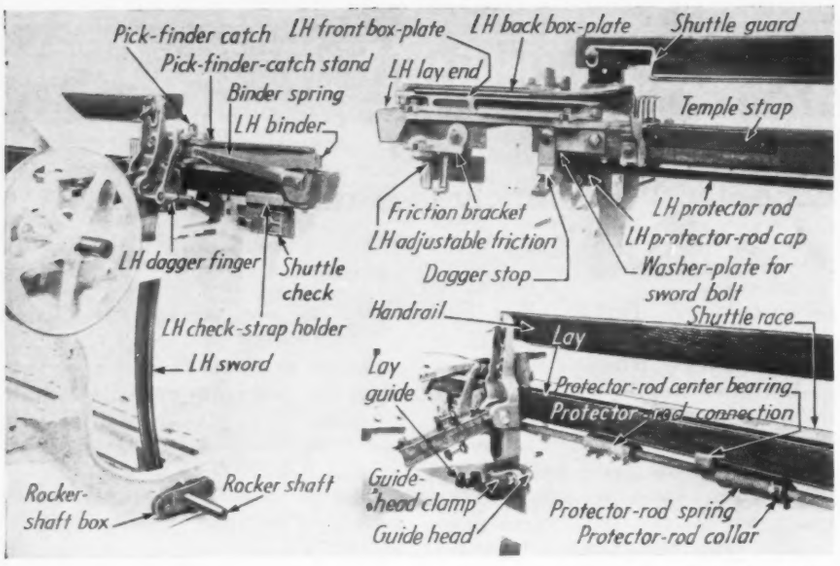


Fig. C68. Diagrammatic view of Draper over-dagger protection motion



Copyright 1932 Draper Corporation

Fig. C69. Parts related to over-dagger protector motion

ment by means of which the reed is held very loosely in the lay when the shuttle is not in the shuttle box. A slight pressure will force it out of the lay and thus prevent it from moving up to the fell of the cloth, if the shuttle is not properly boxed. The reed is firmly held in the normal position, to beat up the filling, providing the shuttle has properly entered the shuttle box. The warp-release motion slackens the warp by means of a trigger arrangement on the whiproll, if the shuttle fails to enter the shuttle box.

With a tight-reed protector motion, the loom is stopped by a dagger on the lay, which strikes a slightly yielding knock-off arrangement when the shuttle is not in its box. These motions may be subdivided into over- and under-dagger types. The over-dagger type is commonly used on Draper looms, in conjunction with back binders; the under-dagger type is most frequently used on Crompton & Knowles looms, in conjunction with front binders. While the location of the binders does not necessarily determine the type of protector motion, it simplifies mechanical arrangements to use over-dagger with back binders and under-dagger with front binders.

Fig. C68 shows a Draper protector motion of the over-dagger type. The daggers are located above the knock-off blocks or "frogs." The frog on the right side is usually in a fixed position and yields very little when struck by the dagger. It is therefore called the "dead frog." The frog on the left-hand side of the loom is so arranged that it can move $\frac{3}{8}$ to $\frac{1}{2}$ in. and thus knock off the shipper handle before the loom comes to a stop. This is called the "live frog."

OVER-DAGGER PROTECTOR motions will now be discussed. Descriptions refer to reconditioning, setting, and adjusting old protector motions, rather than new ones. For new motions, ignore steps which do not apply, and, of course, insert such additional steps as would be called for in setting up new looms.

Remove the entire protector-rod assembly and check it for excessive wear at end bearings, center bearing, protector-rod spring, dagger stop, and dagger tips. The protector rod is in two parts, which are connected by a sleeve coupling. The right-hand end is short and extends only a short distance inside the bearing on that end. The left-hand end extends through the center bearing to meet the short end at the coupling. Either of these two ends may be replaced if it shows excessive wear, provided the daggers remain equal in length. It is better, however, to use two new ends.

If the end bearings show excessive play after a new or built-up protector rod has been installed, a half-bushing may be placed in the bearing cap to take up the play. This is not best practice but, since replacement of the worn bearing (on older-model looms) means replacement of the whole lay sword, it may sometimes be permissible, to save expense. If the center bearing is worn, a new bearing should be substituted.

Frequently, the protector rod shows excessive wear at the center bearing and the spring. If this is the case, the rod can be built up by welding, or the worn piece can be cut off and a new one welded in its place. If the dagger shows wear at the point which contacts the dagger stop, it also may be built up by welding. To preserve the dagger at this point, it is advisable to place a thin piece of leather under the dagger stop in such a way that the free end of the leather is between the stop and the dagger.

When the tips of the daggers show excessive wear, or break, they can be satisfactorily repaired by a blacksmith. If no blacksmith is available, it is best to replace the worn parts. Before a protector rod is installed in a loom, the length of the daggers should be checked to make sure they are exactly equal. The belief of some loomfixers that the left-hand dagger should be longer than the right-hand one is a misconception.

Apply tension from the protector-rod spring to the reinstalled assembly by turning the spring collar. Bring dagger tips tightly against frogs. Apply the brake to hold the loom in this position. The crankshaft should now be about 15° past bottom center. If it goes too far past bottom center before being stopped by the protection, the frogs need new or additional packing to bring them into correct position. Packing should be of a material that can be compressed slightly, to bring the loom to a more gradual stop. The writer prefers rubber bunters, which should be about $\frac{1}{8}$ in. smaller in width and thickness than the space in the frog. This is to allow for lateral expansion of the rubber as its ends are compressed when the loom bangs off. If room is not allowed for expansion, frequently pressure from the expansion bursts the frog.

Following insertion of the rubber, it is often necessary to place one or two pieces of leather outside the bunter to bring the frogs into proper stopping position. After a few light bang-offs to seat the packing, both frogs should be tight when the protection operates. With the loom tightly on protection, move the right-hand frog stop against the frog. The left-hand frog stop should be about $\frac{3}{8}$ in. in back of the frog; this restricts the amount of movement of the live frog necessary before the loom comes to a stop.

Remove frog steels from frogs, and clean lint and dirt from the recess in each frog. Such material, if not removed, might cause one frog steel to rest higher than the other. After making sure the steels rest properly in the recesses of the frogs, turn the loom until both dagger tips just rest on the top edge of the steels. In this position, tighten the setscrews in the sleeve coupling on the protector rod. Do not adjust the daggers with tips resting at the bottom of the frog steels; also, do not set the right-hand dagger higher than the left-hand one, as some misdirected loomfixers do.

Apply the dagger fingers, Fig. C69, and adjust their position so there will be $\frac{3}{16}$ in. clearance between the binder's position when the shuttle box is empty, and the contact point on the dagger

fingers. An alternative in setting the dagger fingers is to bring the lay forward until the fingers are just ready to touch the frog steels, and then put a thin washer under the dagger tips. Next, with binders in empty-box position, adjust the dagger fingers until they just touch the binders.

The object of either adjustment is to so set the dagger fingers that they will support the daggers free of the frogs when the loom is running normally. The only time the daggers should touch the frogs is when they are called upon to give protection. Some dagger fingers of later type have an adjusting screw (see Fig. C68) as a binder contact point; this greatly facilitates accurate setting of the dagger fingers.

Place a shuttle in the shuttle box, and turn the eccentric binder bushings until the daggers will clear the frogs by $\frac{1}{8}$ to $\frac{5}{16}$ in. Repeat this adjustment on the opposite side of the loom.

WOOL SECTION—Chapter IX (Continued)

By BENJAMIN F. HAYES

Filling Stop-Motions

THE COILED SPRING shown beneath the lay in Fig. W10 is a comparatively recent improvement to the No. 9 stop-motion used on woolen and worsted looms. Its purpose is to hold the feeler wires down when the loom is stopped for any reason, and thus prevent the wires from accidentally coming in contact with and tearing the cloth.

Older models are equipped with a flat spring and a regulating screw. This screw is for the purpose of regulating at what position of the feeler wires the pressure by the spring is relieved. Under ordinary conditions, spring pressure is relieved just as the feeler wires enter the feeler-wire slot. With plain-weave or coarse-filling fabrics, the wires can be allowed to go deeper into the slot before the pressure is relieved.

This screw sometimes works loose, finally dropping out and getting lost; without it the spring will not function properly. Sometimes a loomfixer will insert a common feeler wire in place of the spring. This will work fairly well when first installed, but eventually will lose its strength, and permit recurrence of the cloth tearing.

Courtesy Crompton & Knowles Loom Works

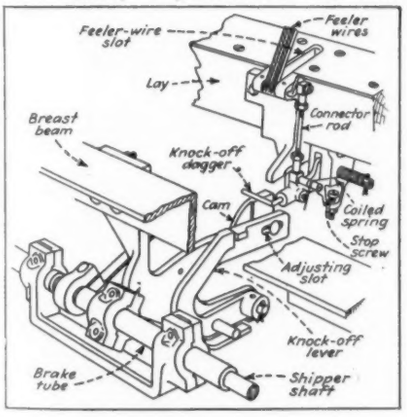
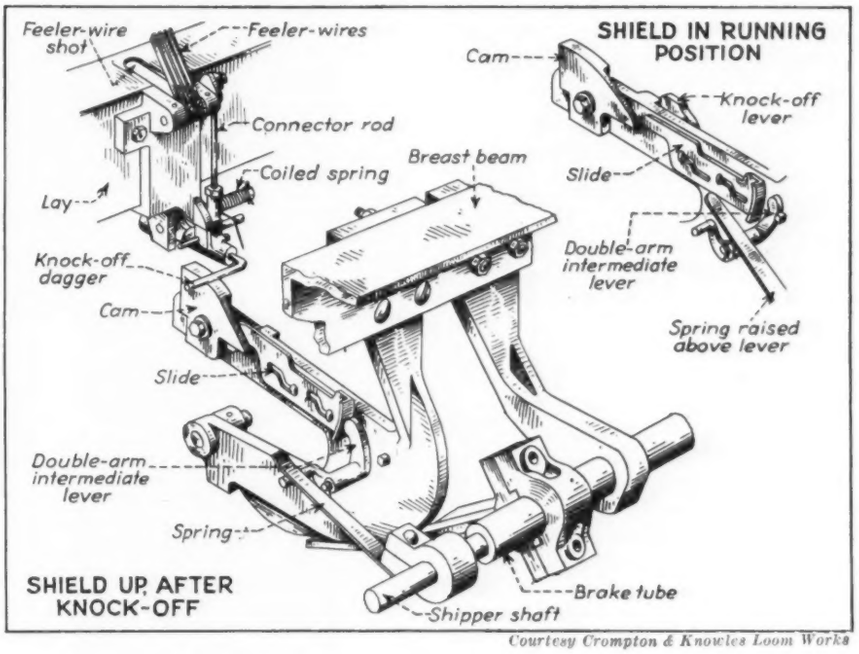


Fig. W10. Diagrammatic view of No. 9 center filling stop-motion (reprinted from January issue, in smaller size, for convenience of readers)



Courtesy Crompton & Knowles Loom Works

Fig. W11. Knock-off shield, in running position and after knock-off

A homemade remedy for such a condition is to fasten an angle iron about 2 in. wide to the breast beam. This should be so placed that it will extend, under the cloth and over the wires of the stop-motion, almost to the reed when the lay is farthest forward.

Such remedies, however, are only makeshifts. Best practice is to keep looms equipped with correct springs, properly adjusted, all the time.

Fig. W11 shows the operation of the shield by means of which the knock-off is prevented from functioning on the first pick after the loom has been stopped, either by warp or filling stop-motions or by the weaver. In the upper right-hand corner, the shield is shown in running position. It will be noted the spring on the shipper shaft is raised above the double-arm intermediate lever so that this does not press against the slide. Hence, the slide remains in lowered position, and the end of the knock-off lever protrudes above it, ready to stop the loom if contacted by the knock-off dagger.

The lower portion of the illustration shows the loom after a knock-off, with the shield up. The spring has pressed on the intermediate lever, and this in turn has pressed against the shield, forcing it into the higher of its two positions. This, it can be seen, prevents the dagger from contacting the knock-off lever.

When the shipper handle is pulled forward to start the loom, the spring is swung upward, and out of contact with the intermediate lever, which returns to its normal position. This releases the pressure against the shield; however, dwells in the cam slots which guide the shield keep it temporarily in the raised position.

After the first pick, the shield is pushed down into running position and the knock-off lever is once more exposed, ready to stop the loom when an incomplete pick is in the shed.

Loomfixers should pay careful attention to the shield and its operating mechanism, so that it will always function correctly whenever called upon.

STAPLE COTTON FABRICS

By JOHN HOYE
Fabric Technician with W. Harris Thurston, New York

This fiftieth installment of Mr. Hoye's series of articles on staple cotton fabrics — which began in the January, 1936, issue — continues the discussion of corset fabrics.

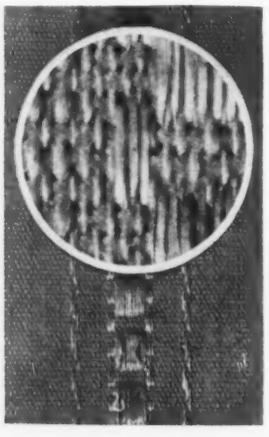
Corset Fabrics

RAYON STRIPES. This is the term used in the trade for "Rayon Decorated Batiste." Large quantities of this fabric are made with a plain-woven cotton ground cloth, having about twice as many ends as picks. An extra rayon warp is used for the design, which floats mainly on the face, usually in stripe formations. Designs usually are dobby woven—a small percentage are jacquard. These cloths usually are made of carded yarns and sold in the gray on the basis of the ground-cloth construction plus the total number of extra rayon warp ends. They are piece-dyed in shades of tea rose, or nude and usually are given a backfilled finish.

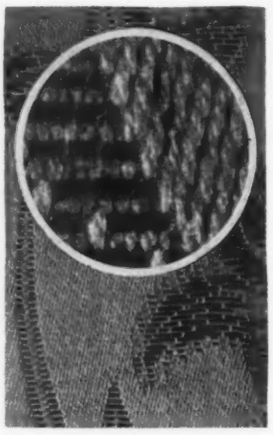
Example of rayon stripe corset cloth:

40½ in. 80 x 44 rayon warp stripes, 30s carded warp, 14s carded filling, decorated with 1,500 ends of 150-den. rayon.

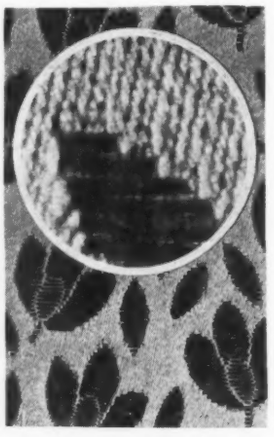
RAYON-WARP JACQUARD CORSET FABRICS. These fabrics have combed or carded filling yarns, higher yarn count, more elaborate designs, and are more expensive than rayon-stripe batistes. They have a plain woven ground and a yarn count similar to cotton broadcloth. The jacquard design, usually floral, is formed by floats of white rayon warp yarns. Cotton filling yarns (singles) are used; for contrast, these are either yarn dyed or stock dyed in shades of nude, tea rose, etc. Sometimes the fabric is given a light backfilled finish.



Rayon warp stripe corset fabric 40½ in., 72 x 38 plus 500 extra ends of 150-den. rayon, 2.60 yd.



Corset brocade, 40½ in., 190 x 80, 1.90 yd.; warp 2-ply mercerized cotton; filling, white and dyed rayon, pick and pick



Piece-dyed corset brocade, 40½ in., 120 x 68, 2.25 yd., 2-ply cotton warp, rayon filling

Example of rayon warp jacquard corset cloth:

40½ in. 120 x 56 rayon warp jacquard, 150-den. rayon warp, 16s combed cotton filling.

CORSET BROCADES (OR BROCHE). These are known also as "Pick-and-Pick Brocade." They are woven on a 2 x 2 box (jacquard) loom, and are usually the most expensive and decorative of all corset fabrics. They are high-count, lustrous, rich-looking fabrics woven with a warp sateen background of mercerized, dyed 2-ply cotton warp yarns. White and dyed rayon filling yarns are used for long satin floats of the design on the face side. These rayon filling yarns are woven one pick white and one pick flesh-colored dyed yarn, giving a two-tone effect.

Example of corset brocade:

40½ in. 190 x 80 pick and pick 80/2 mercerized warp, 300-den. filling.

Similar but cheaper fabrics are piece-dyed in solid colors. They are woven with a 2-ply cotton warp and rayon filling yarn. The background is a closely woven warp sateen. The rayon filling yarn forms the design, most of which floats on one side.

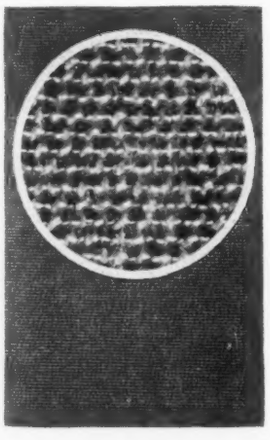
Example of piece-dyed brocade:

40½ in. 120 x 60, piece dyed, 60/2 cotton warp, 300-den. rayon filling.

Plain and fancy woven corset fabrics are also made with rubber core yarns covered with combed, singles, cotton yarns. This type of yarn, generally used in the filling only, gives a characteristic stretch or elasticity to the woven cloth. Cotton yarns used for covering this rubber core are singles 50s to 100s.

Cheaper yarns of this type are made with the core yarn covered with cotton yarn in one direction only. Cotton-covered rubber core yarns are also used in both warp and filling to obtain a two-way stretch. An example of corset cloths made with cotton covered core yarn was given in the previous installment.

Other cotton corset fabrics include *Coutil* (See October, 1936, issue).



Lastex corset batiste, 37 in., 136 x 52, 150-den. rayon warp, 6,000-yd. cotton-covered rubber core yarn

TEXTILE PERSONALITIES

S. MARSHALL AND WILLIAM H. BEATTIE, sons of a textile pioneer, are carrying on the business traditions of their late father, W. E. Beattie, who at various times headed Piedmont (S. C.) Mfg. Co., Reedy River Mills (later Conestee (S. C.) Mills), and Victor-Monaghan Co., Greenville, S. C. Both of the young Beatties studied mechanical engineering at Cornell University, but for a time their paths diversed.

Marshall decided to learn the mill business, and eventually became acting superintendent at Piedmont. In 1923, upon the retirement of his father, he became president and treasurer of the company, which position he still holds. Recognizing his ability as a practical manufacturer, the principals of Woodside Cotton Mills Co., Greenville, S. C., asked Mr. Beattie to take charge of this group of mills in 1936. He took over the job of president and treasurer, and through careful management and long-range modernization is gradually restoring the Woodside group to a position of dominance in the industry. Mr. Beattie is also vice-president of Marion (N. C.) Mfg. Co., vice-president of Wallace Mfg. Co., Jonesville, S. C., and a director of Victor-Monaghan Co. For a great many years he was president of the Cotton Manufacturers Association of South Carolina and is a director in several other manufacturers' associations. As a graduate mechanical engineer, Mr. Beattie's hobby is mechanics, and for many years—much to the agony of his family at times—he insisted on repairing his own automobiles. This mechanical turn is evident at Piedmont Mfg. Co., which has always been one of the most up-to-date mills of its kind in the industry.

William H. Beattie, or Bill as he is known to his friends, came into the industry through a more roundabout path because of the World War. After three years at Cornell he went into the army. As first lieutenant of field artillery he took part in most of the major American engagements and was wounded at Argonne. After the war he spent a year in the cotton waste business and another year with a raw cotton firm. Eventually he got into manufacturing by way of the Victor-Monaghan cost department where he worked for several years. When Wallace Mfg. Co. was sold by Victor-Monaghan Co., Mr. Beattie went with Wallace as vice-president and treasurer. He became president in 1930, which position he still holds. In addition, he has been associated with his brother as assistant treasurer of Piedmont Mfg. Co., and as vice-president and treasurer of Woodside Cotton Mills Co. Mr. Beattie's hobbies are hunting and golf, and he is very active in civic life.

Sons of a textile pioneer—left, S. Marshall Beattie; right, William H. Beattie

R. DAVID HALL, young, red-headed and able textile executive, at 40 has never lived down his school record of being a "bright and good boy." He was a Phi Delta Theta at Davidson College where he was also, twice, debating medalist. After his graduation in 1918 he joined the army and was sent to Plattsburg. As 2nd Lieutenant he was later R. O. T. C. instructor at Carnegie Tech at Pittsburg.

R. David Hall in company with Dave, Jr.

Dave started in the textile business with the S. P. Stowe mills (Majestic, Climax and Sterling) in Belmont, N. C. right after the war and held the position of book-keeper and clerk. He worked hard, learned the business, and today with the business title of secretary-treasurer of Stowe Thread Co., he holds a position of prestige and recognition in the industry which is enviable.

He was for two years president of the Southern Combed Yarn Spinners Association and upon the expiration of his double term—as a mark of especial appreciation of unusual service—he was presented with a handsome set of golf clubs by the members of the Association. He holds an important committee chairmanship in the North Carolina Cotton Manufacturers Association and is a director of the Cotton-Textile Institute. His extra curricular effort last year was that of State Athletic Officer, American Legion—which in plain English means that he directed Junior Baseball of more than 100 teams in North Carolina. He was also Post Commander at Belmont, his home town.

Dave's hobby used to be golf but now it is his one-year-old red-headed son. So if you ever want to discuss business with Red Hall be sure you have covered the field before he gets started on Red, Jr. for once that subject comes up he closes his desk for the day.

NEWS OF THE MONTH

Opp Case Heard

On Feb. 28, in New Orleans, Opp (Ala.) Cotton Mills, Inc., R. D. Sanders mills of Mississippi, and 17 other petitioners attacked the constitutionality of the Fair Labor Standards Act. The grounds were "misuse of power." Specific charges were that the 32½¢ wage rate set by Industry Committee No. 1, appointed by Elmer Andrews, while Wage Hour Administrator, had been set without careful consideration, and that the committee acted too hastily in the matter.

The Government counsel opposed the petitioners' arguments on the grounds that the legislation was drawn in keeping with constitutional objections as corrected in the New Agricultural Marketing Act of 1937.

The three judges in the U. S. Fifth District Court of Appeals before whom the case was heard took it under advisement.

Advantages Listed For Open Price-Reporting

There recently has been agitation among some purchasers of cotton fabrics to eliminate "open price-reporting" of print cloths on the grounds that it is harmful in a weak market and unnecessary in a rising market. Advocates of the present system, including all but a handful of print-cloth mills, have voted to continue it. Some of the advantages of open price-reporting, according to W. P. Jacobs, secretary of the Print Cloth Group, are as follows:

An authentic picture of the market discourages weakness based on rumor and exaggeration.

Stampede is prevented when a large order is sold slightly below market price by showing several other sales at regular prices on the same day.

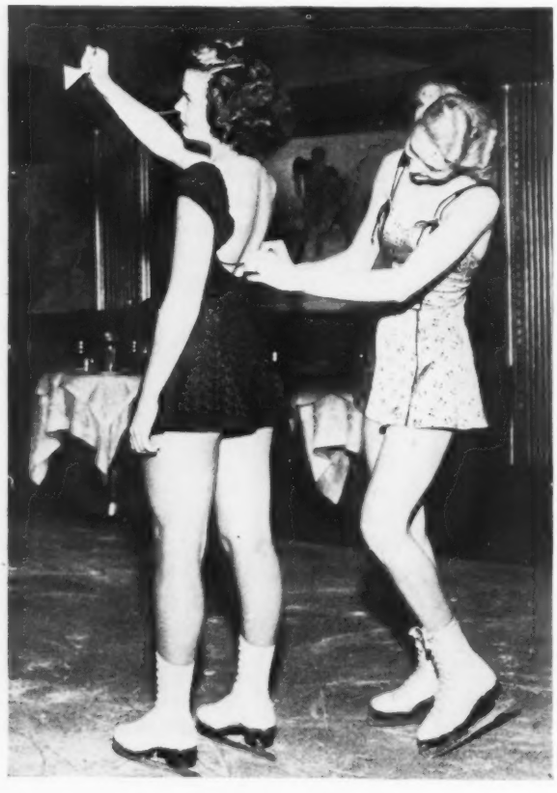
Reports given four times a day have on occasions resulted in two or more justified increases in a single day.

A fair cross-section of the market is available which no one group of mills can furnish.

Open reporting permits both the mill and selling agent to check on the activities of the other in comparison with competitive firms.

Open price-reporting tends to curb speculation which sometimes runs riot when business transactions are carried on in the dark.

A stable market benefits both seller and buyer, and open transactions assure honest customers that they are getting the same price as their competitors.



Swim Suit Styles Put on Ice —Jean Good and Terry McKay, stars of the ice show appearing at a San Francisco hotel, pause in their performances on synthetic "warm" ice to model leading Gantner & Mattern swim suit models for the coming season.

Cotton Council Meets

The first annual meeting of the National Cotton Council was held in New Orleans, La., Feb. 14 and 15, and was attended by 150 leaders in the raw cotton business. Principal business effected was a resolution in favor of Secretary Hull's reciprocal trade treaties, and a decision to send no resolution to Congress in favor of a bill on net-weight trading in cotton. It was stated that the Council does not oppose net-weight trading, but does not endorse it.

President Oscar Johnston in his address stated that the Council in its new-uses promotion work had employed the "best engineer available" (name not given) who had spent six months making a survey of the efficacy of cotton for road building. The engineer's report, according to Mr. Johnston, was that, in its present construction, the cloth used for road building was of no practical help.

Mr. Johnston was re-elected president of the Council, Rhea Blake was re-elected secretary, and Ed Lipscomb will continue in the position of chief of the publicity department.

S. C. Manufacturers Again War on Japanese Imports

South Carolina cotton manufacturers have again declared war on Japan's annoying practice of shipping in great quantities—nearly 65,000,000 sq. yd. in 1939—of bleached cotton goods and wrecking the market for certain constructions. This time it is goods corresponding to 38½ in., 60 x 48, 6.25. By concentrating in such classifications, Japan is in direct competition with mills making these goods in this country. For example, Pacific Mills, with plants at Lyman and Columbia, S. C., have complained publicly of this bleached goods competition.

U. S. Senator Joseph R. Bryson, of South Carolina, in whose district most of these mills are located, has reported this situation to the Tariff Commission and is demanding an investigation. He points out that the declared value of Japanese bleached goods dropped from 7.6¢ in 1932 to 3.46¢ in 1939, permitting 1,500% more goods to come in during the latter year. The only effective way of stopping this, according to Senator Bryson, is to base tariff duties on known American costs rather than on values claimed by the Japanese.

Philadelphia "Knitting Week" Draws Near

At time of going to press, exhibition space already engaged for the Knitting Arts Exhibition, to be held in Philadelphia, April 15 to 18, exceeded the space sold for last year's show. There are already 32 new exhibitors listed, and the space they will occupy more than offsets the space released by several previous exhibitors.

As usual the exhibits will be set up in the large hall adjoining the Commercial Museum. This will be the 36th consecutive exhibition. It will be held as usual under the joint auspices of the National Association of Hosiery Manufacturers and the Underwear Institute, both of which organizations will hold their annual meetings in Philadelphia during exhibition week. Good attendance is anticipated, and while visitors from Europe may be fewer than usual this year, there will likely be increased interest from Latin American countries.

Government Stirring Up Interest in Cotton Hosiery

The Bureau of Home Economics, Department of Agriculture, has developed considerable interest in the field with its four traveling exhibits of 24 cotton hosiery items, designed by David Young of the Textile Division. All the hosiery has been made from high-quality commercial yarn, and the purpose of the project is to increase the consumption of cotton in this particular branch of the textile industry. Great care has been taken to make the hosiery smart and flattering.

The hosiery items include fine mesh effects, lace effects, elastic tops. The exhibits have met good reception from the consumer groups to which they have been displayed. There is increasing interest among manufacturers and retailers in this type of hosiery according to Miss Ruth O'Brien, chief of the Textile Division of the Bureau of Home Economics.

Pacific Cotton Cloth Making to Quit Dover

Plans for the abandonment of cotton cloth manufacture at its Dover, N. H., mills have been announced by Vice-President Henry G. Nichols of the Pacific Mills Corp., on the ground of southern competition. No date for the shutdown was given in a statement handed G. E. Sherry, president of the Dover Independent Textile Workers Union; but Mr. Nichols said that the company will undertake to develop a sound and growing rayon business at Dover. About 700 out of 1,400 employees will be affected.

THE KASHMIR GOAT

In bygone days when kings were kings—and kings were made to rule
When they won loot of gold and jade—and ate big bowls of gruel—
Before the days of "tin box" men and systems new and crude
A kashmir coat was welcome graft for a king of magnitude
And kashmir was so precious—just as it is today
That it was worn by royalty for no one else could pay
The outrageous cost of travel for such top-lofty game—
To be woven into fabrics to gown some winsome dame.

—Quotation from "Stroock's Animal Kingdom," published by S. Stroock & Co., verses by Frances Raftery, illustrations by Paki, covering such animals as the vicuna, camel, llama, alpaca, etc.

N. C. State Dedicates New Textile Building

The new textile building at N. C. State College, Raleigh, was dedicated on March 5 with a feature address by Heriot Clarkson, of Charlotte, associate justice of the N. C. Supreme Court. It was fitting that Justice Clarkson should deliver this address, for, as a member of the General Assembly in 1899, he introduced the bill to establish a Textile School at State College. The measure was adopted two years later.

The new Textile Building, constructed with the assistance of the PWA, cost $354,000. It is of concrete, fireproof construction, four stories high, built in the shape of a T. It has space for all types of manufacturing departments, and new machinery has been installed throughout. Among the departments are yarn manufacturing, weaving, dyeing, research laboratory, exhibition room for students' work, museum, knitting, testing laboratory. It has a complete woolen unit.

Five curricula are offered to textile students: textile manufacturing, textile chemistry and dyeing, textile management, yarn manufacturing, and weaving and designing. Agents from the U. S. Bureau of Agricultural Economics, and the U. S. Institute for Textile Research, cooperate with the school and are located there.

Dean Thomas Nelson, who has been head of the Textile School since it was established in 1901, pointed out that the school then had 32 students. This year 323 enrolled and 65 are in the graduating class.

Expands Tire Cord Division

When the assets of the Fisk Rubber Corp. were acquired by the U. S. Rubber Co. in January, as noted in these columns last month, a large tire cord mill at New Bedford, Mass., containing 60,000 spindles was added to the three tire cord mills in the South which make up the Tire Cord Division of the U. S. Rubber Co. The four mills—at Winnsboro, S. C., Hogansville, Ga., Shelbyville, Tenn., and New Bedford, Mass.—have over 175,000 spindles and employ between 4,500 and 5,000 people. Head-

Hudson's Bay "Point" Blanket box, with a draped blanket lithographed in full color directly on the cover, won an honorable mention for the Hudson's Bay Co., Winnipeg, Manitoba, Canada, the manufacturers, and Esmond Mills, New York, the sole U. S. distributor of these blankets, in the Folding Cartons Group of the All-America Package Competition, sponsored by Modern Packaging Magazine. The new box reproduces every beautiful color, each graceful fold, making it equally as attractive as the blanket itself. Box was lithographed and completely manufactured by the National Folding Box Co., New Haven. Awards will be presented March 27.

quarters of the division will remain in Hogansville, Ga., according to H. Gordon Smith, general manager.

D. J. Brightman and F. L. Burns, who were respectively manager and superintendent of the mills at New Bedford, have been retained in the same capacity. L. D. Swearingen has been transferred from Winnsboro to New Bedford as acting technical supervisor. Donald Carroll has been transferred from Hogansville to Winnsboro to succeed Mr. Swearingen as technical supervisor there, and W. A. Newton has been transferred from Winnsboro to Hogansville to succeed Mr. Carroll as technical supervisor of the latter plant.

Production and marketing of Fisk tires and tubes will be continued by the U. S. Rubber Co. The New Bedford plant will supply cord as in the past for Fisk tires, and will also produce cord for United States tires.

Discuss Standards for Color Fastness

Presentation of finishers' and converters' views of the new color fastness standards developed by the National Association of Finishers of Textile Fabrics featured a meeting of the Textile Square Club, Feb. 27, in New York. E. M. Edgerton, of Pacific Mills, explained the need for the standards, and the work which preceded their adoption by the association. Herbert A. Ehrman, of National Bureau of Standards, stated that the standards will be submitted to the industry for formal acceptance as a revision of the present Commercial Standard CS–59–39. W. P. Pickett, president of Textile Fabrics Association, said that definitions of terms for color fastness are needed and urged that the industry compile such definitions.

Supreme Court Will Review Apex Case

The Supreme Court on Feb. 26 agreed to review the action brought by Apex Hosiery Co., of Philadelphia, against the American Federation of Hosiery Workers, Branch 1, for damages allegedly committed during a sit-down strike. The trial court rendered a favorable verdict, which was set aside by the U. S. Circuit Court of Appeals. A Supreme Court decision on the Apex case is expected to have wide significance because of its bearing on the application of the Sherman Act to activities of unions.

Four New Buildings For Parker High School

Parker School District, Greenville, S. C., on March 26 will formally dedicate a group of four new buildings which are being completed as this issue goes to press. The new buildings will house (1) the vocational school, (2) gymnasium, (3) library and cafeteria, and (4) auditorium. Total cost of the buildings without equipment will be $250,000. Work was carried out by WPA according to specifications drawn up by J. E. Sirrine & Co. Addition of these buildings was necessitated by the increased enrollment in the high school which has grown from 500 to 1,400 in recent years. Some of these buildings will be used for community work and adult education in addition to regular high school activities.

A bolero dress in Walter Dietz's Crown Tested spun rayon and wool flannel, worn by Deanna Durbin in the moving picture "It's A Date"; garment from Horwitz-Duberman, quoted $12.75. This is part of American Viscose Corp's. Hollywood promotional tie-up.

TEXTILE CALENDAR

National Association of Waste Material Dealers, annual convention, Hotel Astor, New York, March 18 to 20, 1940.

National Knitted Outerwear Association, 22nd annual convention, Hotel Astor, New York, April 2 and 3, 1940.

National Association of Wool Manufacturers, 75th anniversary meeting, Copley-Plaza Hotel, Boston, Mass., April 4, 1940.

Alabama Cotton Manufacurers Association, annual meeting, Mobile, Ala., April 4 and 5, 1940.

Phi Psi Fraternity, 37th Annual Convention, Bellevue-Stratford Hotel, Philadelphia, April 11 to 13, 1940.

Knitting Arts Exhibition, 36th annual exhibit, Commercial Museum, Philadelphia, April 15 to 18, 1940.

American Cotton Manufacturers Association, annual convention, Greenbrier Hotel, White Sulphur Springs, W. Va., April 25 to 27, 1940.

Cotton Manufacturers Association of Georgia, 40th anniversary convention, Sea Island, Ga., May 16 and 17, 1940.

National Cotton Week, May 17 to 25, 1940.

Cotton Manufacturers Association of South Carolina, annual meeting, Cashiers, S. C., May 24 and 25, 1940.

American Society for Testing Materials, annual meeting, Atlantic City, N. J., June 24 to 28, 1940.

National Safety Congress, Stevens Hotel, Chicago, Oct. 7 to 11, 1940.

American Association of Textile Chemists and Colorists, 20th annual meeting, Hotel Commodore, New York, Oct. 18 and 19, 1940.

Southern Textile Exposition, Textile Hall Greenville, S. C., March 31 to April 5, 1941.

Carpet Trade Restores Volume Allowances

In February leading carpet manufacturers restored the former principle of dealer allowances in the form of discounts or rebates based on total volume of business. The discounts range from 1 to 5%, and in most cases cover total purchases for the calendar year.

Already in one or two quarters price advances amounting to 5% were announced effective March 1, and it was expected that similar advances would spread through the field.

High-Strength Viscose Rayon Staple Fiber

High-strength viscose rayon staple fiber in several deniers and fiber lengths is now being produced at the Nitro, W. Va., plant of American Viscose Corp. Offered under the name of Avisco, the strong staple is priced at 28¢ per lb. as compared with 25¢ per lb. for ordinary staple. Sizes available are: 1½ den. 3 in., 1½ den. 1⅝ in., 1¼ den. 1⅞ in., 1¼ den. 1¾ in., 3 den. 1⅝ in. and 3 den. 2 in.

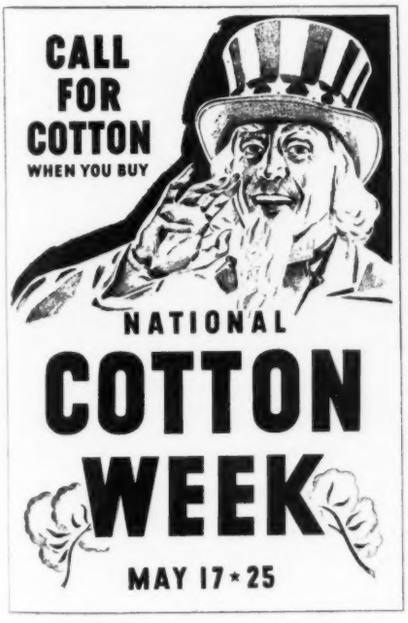
Avisco is already being spun commercially on the cotton system and is being tried out on the worsted system. It is stated that Avisco loses a smaller percentage of strength when wet than does standard staple; it may also be successfully used in yarns of high twist where standard staple would exhibit reduced strength.

American Viscose Corp. also is starting production of regular staple of 4.5 den., a size not previously available. The 4.5 den. is being made in lengths of 1⅛ and 1⅝ in.

A Hosiery Record in 1939

The National Association of Hosiery Manufacturers reports that total shipments for the year 1939, totalling 136,741,480 doz. pairs, is an all-time high record. The figure exceeds 1938's shipments by 6.6%. Seamless hosiery shipped in 1939 totalled 93,663,183 doz. pairs, a gain from 1938 of 8.5%, and shipments of women's full-fashioned hosiery at 43,078,297 doz. pairs, marked an increase of 2.7%. When broken down by various classes of goods, those showing the greatest increase in comparison between the two years were slack socks, anklets and infants' and children's socks. Men's standard half-hose reported a decline.

Despite belief that curtailment in full-fashioned production began in December, January figures showed the highest January production on record. However, since then, curtailment has spread and in early March was drastic, especially in the South.



Poster for 1940 National Cotton Week

One of several samples of pigment-printed textiles shown by Henry Young, of Aridye Corp., at a recent meeting of the Textile Square Club, in New York. This design—a World's Fair theme—illustrates the results being obtained with pigment printing in achieving photographic effects.

Generic Names for Rayon Fabrics

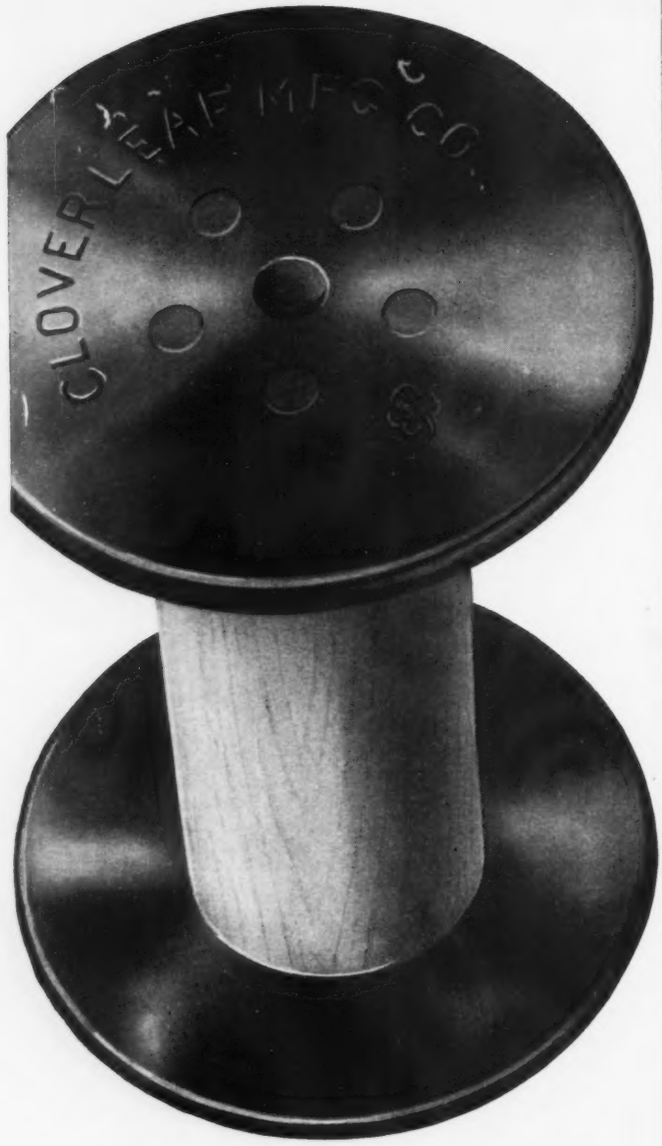
At a recent meeting in New York of the National Retail Dry Goods Association, H. W. Rose of American Viscose Corp., New York, chairman of the special committee appointed last year to select new names for rayon cloths, reported a number of such names already selected. The name "Trossach" was selected last season to describe a dress and suiting fabric made of a blend of acetate and viscose rayon staple and wool with distinctive wooly characteristics and having cross-dye properties.

For the large group of dress fabrics made of filament rayon in plain weaves, sometimes known as taffetas, of constructions ranging from 92 x 68 to 72 x 56, the name "Twalle" was selected. If voile twist is used in the fabric, the item should be referred to as Crepe Twalle; if, however, crepe twist is used, the fabric is not in the Twalle class.

For the two-ply alpaca type, made of filament yarn with two-ply warp and filling of viscose crepe twist and acetate normal twist, the name selected is "Grenal". Similar fabrics already having trade names established on the market may be described as "Cynara Grenal" or "Magic Hour Grenal".

Wage Cut Not to Be Restored Without Change in Work-Load

An arbitration board consisting of Prof. Sumner Schlicter of the Harvard Business School, Rev. H. Leger of Salem, and Judge W. H. Fay of the Peabody district court has issued a report against restoration of the 9.09% wage cut imposed during 1938 by Naumkeag Steam Cotton Co., Salem, Mass. The board stated, however, that it believed it is possible and desirable for the company to increase wages, provided the work-load is altered. Both sides have agreed to discuss the work-load question, and the union, a branch of the CIO, accepted the report.



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Print Cloths Trade Spotty

Near the end of February, mills were refusing to accept bids for sizeable quantities of print cloths below market levels, but trade was rather listless with both sides waiting for some stimulus. There is talk among manufacturers of curtailment of production, and this seems a desirable thing in view of the declining size of the market's backlog.

Denims, napped goods and some converters' lines have successfully resisted the downward pressure and are well sold ahead.

Fall Wool Goods in Spotlight

Openings of fall wool goods lines in several important quarters have been withheld a little longer than anticipated. Several lines already opened indicate that the basis will be close to that of last September.

Clothiers with fixed retail price ranges find a problem on their hands since not only are fabric prices higher than they were a year ago, but it is anticipated that clothing labor costs will go up 7 to 10% around April 1. In many cases there will be manipulation to retain the retail figure.

Rayons Less Active

Mill activity upon standard rayon fabrics was reported at 86% production near the end of February compared with 90% one month previous.

Unless the fabric market speeds up, it is believed that there will be a slowing up in deliveries of viscose-process rayon, although acetate yarn and fiber will doubtless show no signs of accumulation at least through the spring.

Is Raw Silk Stabilized?

Since certain grades of raw silk broke through the $3 ceiling into the upper $2 range recently, the market fluctua-

Textile Chemists Meet at Greenville—Technical papers by chemical specialists and group discussions marked the recent winter meeting at Greenville, S. C., of the Piedmont Section of the American Association of Textile Chemists & Colorists. Those taking prominent part in the session and shown above are (left to right): W. W. Trowell, of Hercules Powder Co., who spoke on semi-resin finishes for cotton piece goods; H. E. Keifer, of Ware Shoals Mfg. Co., section chairman; John C. Cosby, Greenville representative of Calco division of American Cyanamid & Chemical Corp., member of local arrangements committee; E. S. Tillinghast, assistant superintendent of Union Bleachery, and member of the local committee; R. D. Sloan, Greenville representative of DuPont and secretary of the section; Dr. G. P.

tions have been more moderate than for many months previous. The Yokohama Bourse as usual was the leader in the price situation and the outside price of grade D in the Yokohama market was quoted at 1620 yen per bale in early part of March. The 78% 13-15 den. silk in New York was quoted around $2.95. Users are wondering whether the Japanese are beginning to understand that their highest self-interest is closely tied up with a stable raw silk market.

Domestic mill takings of raw silk in January amounted to 29,506 bales, compared with 40,816 for January a year ago. Takings for February amounted to 22,485 bales compared with 33,219 a year ago.

Hosiery Bows to Silk Decline

Since raw silk carried through most of February at the $3 level or slightly lower, a number of hosiery manufacturers bowed to what they regarded as the inevitable and reduced prices on their spring offerings. Prior to that there had been a definite lull in buying, with retailers using a certain amount of ballyhoo regarding Nylon to impel hosiery men to reflect the lower silk levels in their prices.

The situation is particularly difficult for hosiery mills since they were slow to reflect the advance in raw silk and are now being compelled unduly promptly to reflect the decline. Prices are down 25 to 50¢ per dozen on lower priced numbers. Numerous mills are running short time.

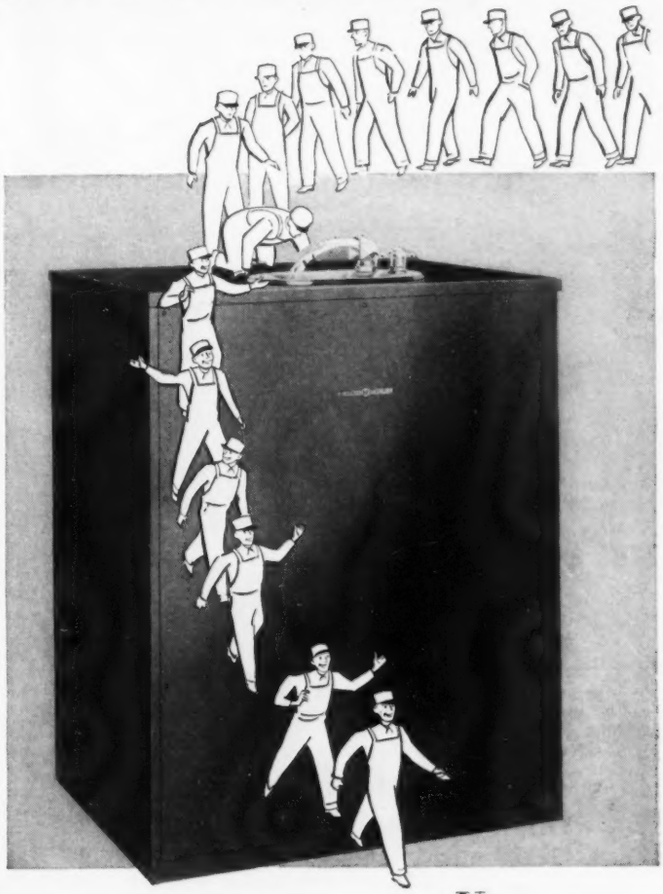
A number of houses are taking orders for Nylon hosiery for delivery beginning upon the opening date of May 15. The right to allot against orders is being reserved in event that orders exceed what can be produced. A number of leading mills are withholding Nylon offerings until the regular spring business is done in their bread-and-butter lines.

Progress in Fall Underwear

Since the opening for the fall season some four or five weeks ago, selling houses have recorded reasonably good

Vincent, of Mathieson Alkali Works, Inc., who spoke on "Textone, a New Oxidizing Agent for the Treatment of Textiles"; R. D. Howerton, Charlotte representative of American Cyanamid & Chemical Corp. and treasurer of the section; L. M. Boyd, of Scholler Bros., Salisbury, N. C., vice-chairman of the section; M. R. Pickler, of Piedmont Plush Mills, Greenville, member of the sectional committee and chairman of the local arrangements committee. Mr. Keifer presided over the general meetings. H. Grady Miller, of Elliott Knitting Mills, Inc., Hickory, N. C., led a discussion group for hosiery dyers on "Problems Presented by the Use of Synthetic Fibers in Full-Fashioned Hosiery." Dr. James Scott Long, research chemist and member of the board of Devoe & Raynolds, spoke at the banquet.

How to properly quench 110 parched throats per hour



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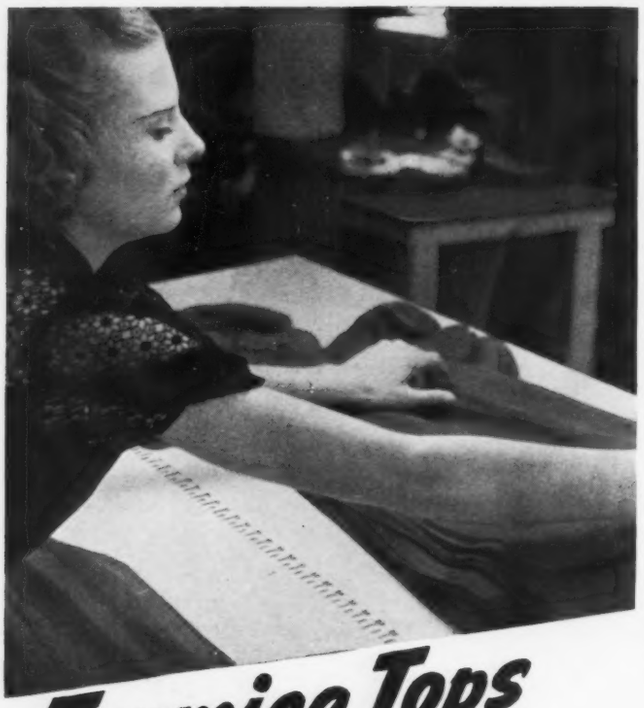

Formica Tops Won't Snag Hosiery or Fabrics!

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orders, especially upon staple lines. Representative items were up 25 to 50¢ over prices of a year ago. One line of unbranded 12-lb. union suits was priced at $5.62½. It is said that current stocks of heavy-weights have been generally depleted because of the rigorous winter weather.

In women's rayon underwear there has been a let-up in demand, but mills expect retailers to return to the market with duplicate business as soon as spring retailing begins.

Fall Outerwear Catches On

Fall selling in knitted outerwear, which has been moving for only a few weeks, is reported to be making more progress than it did a year ago. Novelties are the order of the day and fancy yarns and fancy garment designs lead.

Rayon jersey gives promise of broad demand not only as lining for dressmaker bathing suits made of woven fabrics, but for suits, sports frocks, evening gowns and turbans.

All-Wool Blankets Open for 1940

Between the middle and end of February most of the blanket manufacturers priced their new lines for 1940. In a general way prices were from 5 to 20% higher than at this time a year ago. This means generally that the prices established last October are continued forward for the balance of this year. It is believed that, as the season develops, spun-rayon blankets will increase in importance.

This and That

Phi Psi Fraternity will hold its 37th annual convention at Bellevue-Stratford Hotel, Philadelphia, Apr. 11 to 13, under auspices of Alpha Chapter. There will be an exhibition of the accomplishments and interests of the fraternity, which has nine chapters and over 2000 members.

Laurel Hosiery Co., Reading, Pa., is about to enter the cooperative hosiery movement under leadership if Rev. David Colony of Philadelphia, as Pagoda Hosiery Mills.

Textile Operating Executives of Georgia will hold their next general meeting to discuss carding and spinning at Georgia Tech, Atlanta, Ga. Mar. 23. J. H. Daughdrill, general superintendent of Callaway Mills, will lead the carding discussion and Julian M. Longley, agent of the American Thread Co., will conduct the discussion on spinning. J. C. Platt, general chairman, has arranged for some special features.

National Association of Waste Material Dealers will hold its annual convention at the Hotel Astor, New York, March 18 to 20. There will be a special session devoted to discussion of the future of rags as a raw material. Arthur Besse, president, National Association of Wool Manufacturers, will speak.

Botany Worsted Mills, Passaic, N. J., has arranged for tie-ups in Hollywood involving use of Botany fabrics in the costumes used in pictures. One of the first of these tie-ups was with RKO on the picture "Swiss Family Robinson."

National Knitted Outerwear Association has launched its fifth annual bathing-suit anti-return campaign. Last year the Association supplied more than 6,000,000 anti-return bathing-suit tags.

Alabama Cotton Manufacturers Association will hold its annual meeting in Mobile, Ala., on April 4 and 5. Dr. C. T. Murchison, president of Cotton-Textile Institute, will be one of the speakers.

Federation of Textile Technical Associations has been chartered in Canada. E. P. Carney is president. A textile foundation will be set up at one of the colleges.

National Knitted Outerwear Association will hold its 22nd annual meeting at Hotel Astor, Apr. 2 and 3. The banquet

will be held Apr. 3, with L. R. Michelson in charge of arrangements. An attendance of 1000 is expected.

Bigelow-Sanford Carpet Co., New York, has created the Dri-sor-bene Division to handle sales of its recently introduced cleaning preparation. The cleaner was developed for use on hard-twist-pile carpets which might be injured by soap or wet cleaning. It has been found applicable to many other cleaning purposes.

The Textile Basketball Tournaments brought together over 1,000 boys and girls from textile communities in five Southern States for the 20th annual Southern Textile Basketball Tournament held March 6 to 9 in Textile Hall at Greenville, S. C. Leonard Howard, Dunean Mills, Greenville, is president of the association; Horace Whitmire, Brandon Corp., Greenville, is secretary.

The chenille bedspread industry of Dalton, Ga. and elsewhere, has lately been pushing the diversification of its product, house coats, robes, beach coats and sportswear being manufactured. It is fast becoming a branch of the garment industry.

A large consignment of cotton machinery was shipped from Boston Feb. 25 to South America. Some from the Goodyear Tire Fabric plant and the Booth Mill at New Bedford, was destined for Sao Paulo, Brazil. Some machinery from J. & P. Coats, Pawtucket, R. I., was consigned to Rio de Janeiro.

Better Sox Knitting Mills, Fort Atkinson, Wis., recently consigned a shipment of two dozen pairs of silk and wool three-quarter-length hose, made to order, to Pope Pius XII, Rome, Italy. It was the second order of hose which Better Sox has knit for the Pope.

McCrossen Hand-Woven Textiles, Inc., Santa Fe, N. M., is not only expanding its already well publicized line of wool neckties, but it is going into the weaving of suitings and topcoatings. Price is about $3 for 28-in. goods.

Processors have reduced prices on mercerized yarns 3 to 5¢, the 60s/2 being quoted at 69¢ on Feb. 28.

Arlington Mills, Lawrence, Mass., founded Feb. 20, 1865, as Arlington Woolen Mills, celebrated its 75th anniversary last month.

Strutwear Knitting Co., Minneapolis, is launching a campaign on its inside-out full fashioned hosiery sold under the brand "Ree-Verse." Duller sheen, trimmer appearance, less tendency to snag and sheer looks are claimed.

Educational displays of textiles, which were a feature of the Consumer Conference sponsored by the Advertising Women of New York, Inc., at Hotel Pennsylvania on Feb. 21, drew large crowds. Among the exhibitors were American Viscose Corp., Rayon Division of E. I. du Pont de Nemours & Co., Celanese Corp. of America, United States Testing Co., Forstmann Woolen Co., Arlington Mills, and International Silk Guild.

Production of Lanital in Italy for 1939 is reported at 2,205,000 lb., a considerable reduction from the reported production of 3,748,000 lb. in 1938. The production of filament rayon at 101,400,000 lb. in 1939 was about the same as in 1938, while the production of 143,300,000 lb. of rayon staple marked a reduction from the 1938 figure of 166,900,000 lb.

Printed copies of Simplified Practice Recommendation R143–39 covering stock sizes of paper cones and tubes for winding warp and knitting yarns, tire cords, thread, wire insulating yarns, etc., can now be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5¢ each.

Long Island (N. C.) Cotton Mill, a unit of Superior Yarn Mills, Inc., is celebrating its 100th anniversary. It was built in 1839 by Powell and Shuford. Later it was sold to James Brown, of England, who converted it into a hosiery mill.

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☐ Building Estimating	☐ Mechanical Drafting	☐ Structural Drafting
☐ Chemistry	☐ Mechanical Engineering	☐ Structural Engineering
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Ridge Mills Processing Tax Case Heard

Result will affect others totaling $100,000,000

By Special Correspondence

IT IS IRONICAL that just as Secretary Wallace has the textile industry worried about his proposal for a new form of cotton processing tax, known as the certificate plan, the repercussions of the first processing tax draw to a climax in the case of Ridge Mills, Inc., vs. U. S. Government. This is probably the most important case in the history of the textile industry since the Hoosac Mills case which invalidated the processing tax Jan. 6, 1936. It covers the matter of processing tax refunds, and although only $11,000 is involved in this test case its result will affect other cases totaling nearly $100,000,000! It opened in Charlotte, N. C., Feb. 27.

The events leading up to the present situation are these: the processing tax was paid by Ridge Mills, from the effective date of the tax, Aug. 1, 1933, through March, 1935, at which time (and following the lead of many other cotton textile mills) the Ridge Mills filed an injunction against the Collector of Internal Revenue restraining him from collecting the tax. From that point on—until the invalidation of the tax—the Ridge Mills paid the tax in escrow. Upon invalidation of the tax, the amount of money in escrow was returned, and the Ridge Mills filed claim for a refund of the tax actually paid and the claim was denied. Thereupon, Ridge Mills, filed an appeal, which was also denied. The present case is the result. The claimant's contention is that since the tax was invalidated, and the mill had absorbed the tax instead of passing it on to its customers, the Government should grant a refund of the tax paid.

Chief witnesses for Ridge Mills and, indirectly for the entire textile industry, were Dr. Claudius T. Murchison, president of Cotton-Textile Institute and Dr. David Friday of Washington, D. C., nationally known economists. Other witnesses for Ridge Mills were C. D. Gray, W. J. Terry, Henry Rankin, J. C. Roberts, each of whom testified as to various phases of administering the affairs of a cotton textile mill.

Dr. Murchison delivered an able and comprehensive statement on the economics of the cotton-textile industry covering the period from 1923 to January, 1940.

The theme of the statement was the feast-and-famine economics of the industry, and his theory was illustrated by the use of charts which showed the fluctuating prices of raw cotton, cotton yarns (using 80/2 as illustration) and cotton woven goods. He explained the fluctuating margins of profit; showed by the chart the relation of production to new billings and to inventories. He explained the unusual conditions existing in the industry during 1933, and the revolutionary influences of NRA on the textile industry. It was his opinion that the textile mills did absorb most of the processing tax and that the tax was a depressant on the textile markets.

On March 1, the hearing was adjourned to Washington, D. C. to begin its second week on March 5. There Dr. David Friday was the principal witness. Dr. Friday supported all of Dr. Murchison's statements through substantiating testimony of his own.

Three important points were developed during the trial: establishment of inflationary influences of Roosevelt administration in 1933 on textile prices; necessity of eliminating those so-called feast periods from computations of mill margins; establishment of mill margins and their relationship to raw cotton prices and cotton goods prices.

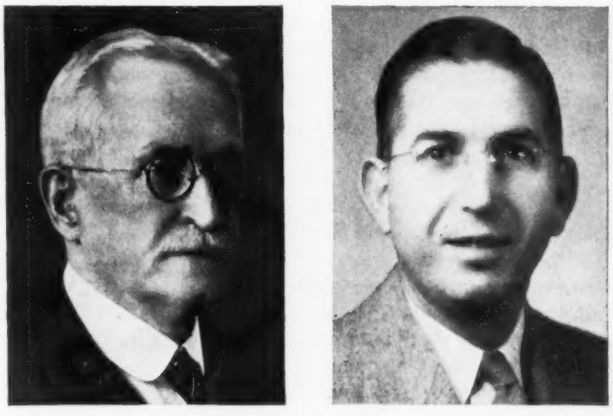
From the record of the testimony the U. S. Processing Tax Board of Review will render its decision probably two or three months from now.

Heard Is Philadelphia Textile School Dean

Dr. France resigns as director, terminating 56 years of service in that office

RESIGNATION OF DR. EDWARD W. FRANCE as director of the Philadelphia Textile School, and appointment of M. E. Heard to succeed him, were announced at the annual banquet of the Alumni Association of the school March 1. Mr. Heard has been head of the Textile Engineering Department of the Texas Technological College, Lubbock, Texas.

Dr. France's resignation means the termination of 56 years of service as director, dating almost from the start of the school. Commenting on this remarkable service record, J. Stogdell Stokes, president of the Philadelphia Museum of Art, of which the textile school is a part, stated: "Under his wise direction the school has gained an international reputation and has steadily grown in influence and usefulness. A large number of the leaders in the textile industry have been taught by him and he is probably the most widely known and respected person in this important field. Dr. France feels he has earned his laurels and that the time has now come for a younger man to take his place. His



Dr. Edward W. France (at left) retiring director of Philadelphia Textile School; M. E. Heard (at right) newly appointed dean.

resignation has been accepted with deep regret by the Board of Trustees who have expressed their appreciation of the value of his life's work, that has brought the school to its high position in the textile world."

Mr. Heard, whose title will be Dean of the Philadelphia Textile School, got his early textile training at the Lanett Mill of the West Point Mfg. Co. at Lanett, Ala. This was followed by a course at high school; he then entered Georgia Tech, of which institution he is a graduate. His service at Texas Technological College has included, successively, the ranks of assistant professor, associate professor, and finally full professor and head of his department. In announcing his appointment, Mr. Stokes stated: "These positions have brought him in close contact with various manufacturers and others in the textile field, and he brings to the Philadelphia Textile School a very wide and valuable experience which promises to maintain the high standards of the school and carry it forward to future achievements."

At the banquet of the Alumni Association, when the announcement was made, Dr. France was tendered a tremendous ovation by the more than 200 former students of the school who were present. Bradley C. Algeo, president of the association and a member of the school's faculty, was toastmaster. Speakers at the dinner included William S. Livengood, Jr., Pennsylvania State Secretary of Internal Affairs, and Dr. John L. Davis of New York.

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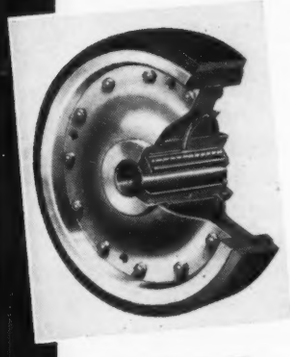

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Front Royal Viscose Plant Nears Completion

Strong-yarn production to start this spring

DISTRIBUTION of pay envelopes is to begin this spring at the big plant of the American Viscose Corp. of America, now nearing completion just outside of Front Royal, in Warren county, Va. It is expected the number of employees will exceed 2,000.

The Front Royal plant will have a production which will approximate that of any of the other divisions of the company, although it is built in one unit rather than in two or more, as are the corporation's other plants. There is ample room at Front Royal, however, for more units if and when desired. The output of the Front Royal plant, according to reported plans, will consist mainly of strong type yarns.

In virtually all of its aspects, the plant gives the impression of bigness and roominess. Provision has been made for large chemical batches. An example of this is in the steeping of cellulose sheets. Not only is a large part of the usual handling eliminated, but the quantity of cellulose steeped in each press is said to be substantially larger than in other rayon yarn plants.

At Front Royal, there is further development of straight-line production, from cellulose at one end of the building to finished yarn at the other. This has allowed the building of large solution rooms along the line of operations. A minimum of piping is thus necessary. The solution rooms are of such size as to permit installation of more equipment as production expands. Ideal working conditions are effected by air-conditioning and by lighting which simulates daylight.

A new type of cake-washing treatment is to be set up at Front Royal. Company engineers had experimented with cake-washing as against wet-reeling and skein treatment for some time, and ultimately adopted the former. Most of the preliminary machinery is ready, and assembling of spinning machines is progressing satisfactorily, and officials on the ground say there is everything to indicate full production during the coming spring.

On the employee relations side, the company is providing two large cafeterias with hardwood floors, which can be used as recreation rooms. There will be a large medical section, with a resident physician in charge. The grounds already have a heavy turf, and additional trees have been planted.

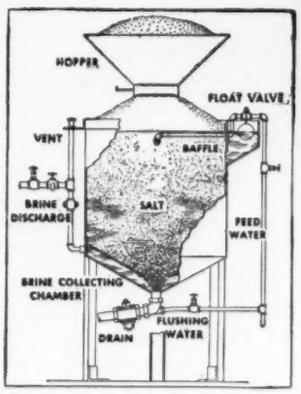
Front Royal, Va., plant of American Viscose Corp. as it appeared from the air two months ago

Salt flows in—

Profits flow out

★ ★ ★

Why Lixate Brine is replacing Glauber's Salt in so many textile mills

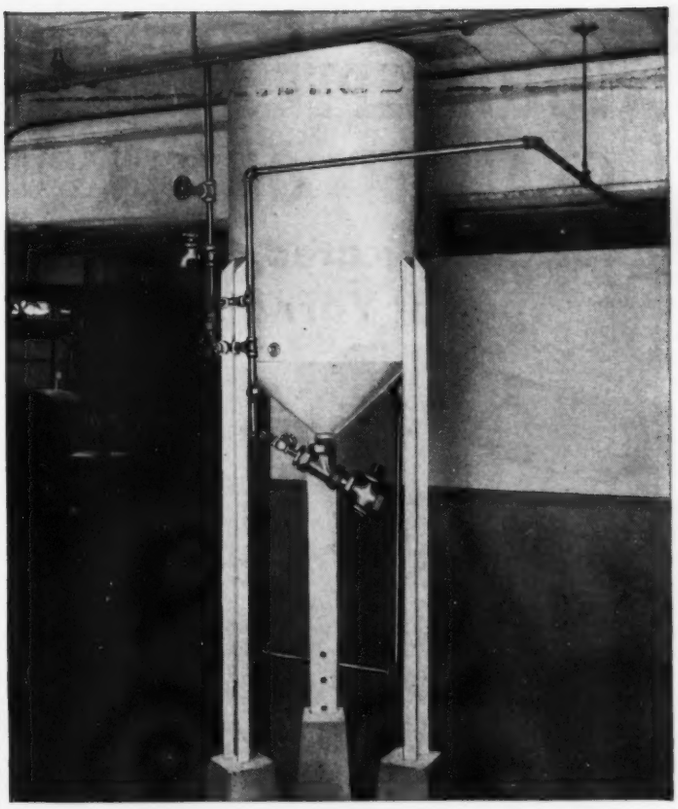


THREE GROUPS of people in textile wet processing have discovered many advantages of using Lixate Brine instead of Glauber's salt or dry sodium chloride in the textile mill. These three groups are: The textile colorists and chemists; plant superintendents; management.

Technical experts have found that the uniformity of Lixate Brine aids in controlling the proper balance of chemicals in the dye baths. Practical workmen discovered that Lixate Brine helps them to obtain more level dyeing. Management has discovered that Lixate Brine saves money—in addition to its other quality advantages.

Lixate Brine is made automatically from Retsof, Detroit and Avery brands of Rock Salt—and about half as much salt as commercial Glauber's salt is required to exhaust the dyes in a normal operation. This is a saving that becomes one of mere mathematics of costs. Yet to you—concerned with costs and finance—another fact is still more important. If Glauber's salt costs no more per ton than Rock Salt, the Lixate Process would still make important savings. That is because it is automatic. It makes 4 major savings because—

1. It saves in the cost of labor for handling salt.
2. It saves all the labor or power cost for making brine.
3. It saves in the cost of distributing brine—or solid salts—throughout the mill or plant.
4. Users report savings of 10% to 20% in the amount of salt required.



WOONSOCKET RAYON CO., Woonsocket, R. I.

The Lixate installation illustrated above has been in service for more than five and one-half years. In any textile mill where salt brine is used or can be used, The Lixate Process provides operating economies that continue year after year.

★ ★ ★

Lixate Brine is now making savings in mills that wet process cotton, linen, rayon and wool. It can make the same savings in your operations that it has made for others. It costs nothing to find out how much you can save. A letter will bring—at no obligation—a Lixate Engineer who can tell you how you can make practical and important savings with this automatic process. Write today for full information.

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WRITE FOR THIS BOOK

Find out how many different industries are now making real savings with The Lixate Process. See how intensive study and research can provide even textile experts with helpful technical information about salt and salt brine. Write for a free copy of The Lixate Book.

The **LIXATE** *Process*

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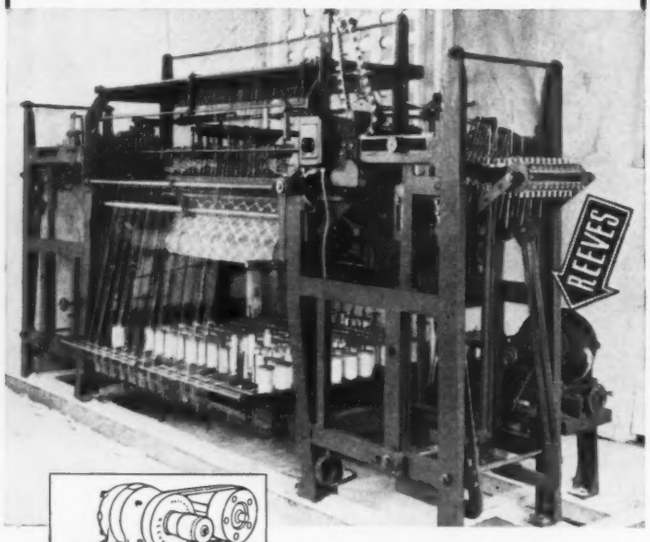

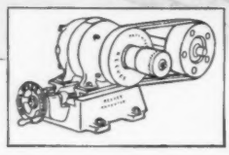

• This new Butt Knitting Loom is unique in many ways—none of which is more important, however, than the inclusion of REEVES Speed Control.

By means of the REEVES Vari-Speed Motor Pulley with which the machine is standardly equipped, operators are enabled to change speeds *quickly* and *accurately* for any change in yarn or intricacy of pattern. Each pattern and type of yarn can be run at the maximum economical speed, up to 110 picks per minute—without requiring the labor of a mechanic or loom fixer to change gears or make other adjustments.

That the manufacturer of this machine should have selected REEVES Speed Control for this application is not strange, for no other speed control manufacturer has had such wide and intimate experience in the textile industry as REEVES. No other has such a varied line of speed control units to choose from. REEVES Speed Control is the *proved* method. You take no chance of disappointment when you install a REEVES. Catalog G-397 illustrates and describes many textile applications. Write for it.

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SPEED CONTROL

NEWS ABOUT MEN

A. H. Eastwood is the new president of the Culpepper (Va.) Textile Mills. He succeeds **R. Y. Button.**

Ray Ferguson of Cleveland has been elected president of the American Lace Mfg. Co., Elyria, Ohio, succeeding **Leonard Birch** who resigned because of ill health. **Herbert L. Wheatley,** secretary, has been made director of manufacture.

Fritz Quittner has been elected vice-president of the Merion Worsted Mills, West Conshohocken, Pa., succeeding **James H. Purdy.**

T. Holt Haywood is now associated with the J. W. Valentine Co., New York as that organization's southern representative. His headquarterters are at Winston-Salem, N. C.

William H. Bradshaw, director of viscose rayon research for E. I. du Pont de Nemours & Co., Buffalo, N. Y., has been awarded the Jacob F. Schoellkopf 1940 Medal for Achievement in Chemistry, and the award will be made at the May meeting of the Western New York Section of the American Chemical Society.

A. B. Boozer has been elected vice-president and general manager of the Klumac Cotton Mills, Salisbury, N. C. He has been superintendent of that company for the last 18 months.

E. Raymond Streat, director Manchester (England) Chamber of Commerce, who with **Col. W. A. Grierson,** made up the Chamber's recent delegation to this country, has been appointed secretary of the Board of Trade's new export council set up to intensify British export efforts.

E. D. Pitcher of Marshall Field & Co. Manufacturing Division, Spray, N. C., was tendered a dinner by his associates on the occasion of the 55th anniversary of his connection with the company. **Luther Hodges,** general manager of the Manufacturing Division, was toastmaster. Mr. Pitcher entered the accounting department in Chicago in 1885 and then went to North Carolina as secretary-treasurer of the Carolina Cotton & Woolen Mills Co., when Marshall Field acquired its southern mills under that name. He has long been prominent in the financial activities of the Manufacturing Division.

Robert Rout West, who has resigned effective Apr. 1 as president and treasurer of Riverside & Dan River Cotton Mills, Danville, Va. He had been with the big corporation 10 years, succeeding to the presidency on the death of H. R. Fitzgerald. The board has appointed George W. Robertson, general superintendent and a vice-president, as executive vice-president.

George A. Sloan, former president of the Cotton-Textile Institute, who is chairman of the Metropolitan Opera Fund's campaign committee, has announced the formation of a national Industrial Committee to aid the campaign. Textile men included in the committee are **Col. G. Edward Buxton** of Providence, R. I., former president of the National Association of Cotton Manufacturers, and **Henry P. Kendall,** president of the Kendall Co., Boston.

H. A. Ford has been elected president of the Fontain (Va.) Converting Works, succeeding **A. L. Tuggle,** resigned. **Andrew Blue,** superintendent of the plant, was elected vice-president to succeed Mr. Ford. **Irvin A. Post,** of Paterson, N. J., succeeds **K. C. Whittle** of Martinsville, Va., as secretary-treasurer.

J. C. McMurray has been elected president of Springfield (Tenn.) Woolen Mills, succeeding **John Ewing Garner,** retired on account of ill health. **Harry Elam** was re-elected treasurer and **E. B. Bond,** secretary and manager.

James C. Self, president and treasurer of the Mathews Cotton Mills and the Greenwood Cotton Mills, both at Greenwood, S. C., and the Ninety-Six (S. C.) Mills, has purchased a 33-bell carillon, which last year was a part of the exhibit of the Nether-

Long Live BEARINGS!

Three ways to help: consider the effect on your oils of LOAD, of HEAT, of CONTAMINANTS

LET'S LOOK at bearing lubrication through the eyes of your plant engineer—a highly practical person. He usually does little talking about lubrication theories. He sees lubrication as one of the important means to the end he's after . . . which is to give you all the operating efficiency your machines can deliver at the lowest cost.

But he's thinking always of your actual machines—some of which have to work under abnormal conditions. Does it pay you to run one of them at a fairly consistent overload? Very well; he'll just have to adjust his lubricant to that overload. Perhaps another one has to inhale a lot of sulphur; a third works in atmosphere choked with dust. He'll just allow for those contaminants in figuring what oil best does the job, and how best to purify it.

Among the many conditions he deals with, in choosing and controlling his lubricants, he's certain to lay emphasis on these three: operating *loads;* range of bearing *temperatures;* extent and kind of *contamination.*

The Load on a Bearing

The job of a bearing lubricant, stated simply, is, of course, to form an oil film that keeps the metal of the journal from touching metal of the bearing. It's always easy enough to agree on basic theories.

But let's suppose that in one of your bearings you've figured on a normal unit of pressure of 500 lbs. per sq. in. Under that load the oil you're using maintains a perfect oil-wedge formation, like that in Fig. 3 above. Later, it happens to make sense for other reasons to throw an extra 200-lb. load on that bearing. As the journal is pulled downward, the oil film on the pressure side becomes thinner . . . and thinner. Does it reach the danger point? That depends on what adjustments your engineer has made in his oil.

How Much Heat?

Yet he can never deal with this problem in isolation. He must at the same time keep in mind the bearing temperature. Temperature, as you know, acts upon oil viscosity both as cause and effect. Is viscosity too low? The oil may be squeezed out—result: metal-to-metal friction—and up goes the heat. Yet too heavy an oil sets up excess fluid friction, generating and holding heat: bad first for the oil; soon after, hard on the bearing.

Here, too, your engineer gets the effective lubricant only by considering in each of your bearings *all* the factors that may alter the temperature.

Three Stages in the Formation of the Oil Wedge

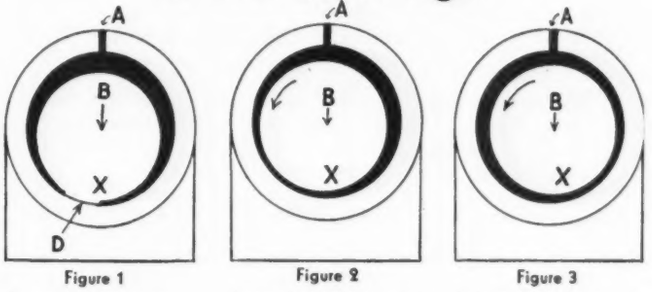


Figure 1 — Journal (X) at rest. Metal-to-metal contact and high-pressure point at (D). Load (B) vertical. Lubricant-introduction point at (A).

Figure 2 — Journal (X) starting in motion. Oil film and wedge create high-pressure point where metal-to-metal contact existed in Fig. 1.

Figure 3 — Journal at full speed. High-pressure point has moved to the right following direction of journal motion and pressure of oil wedge.

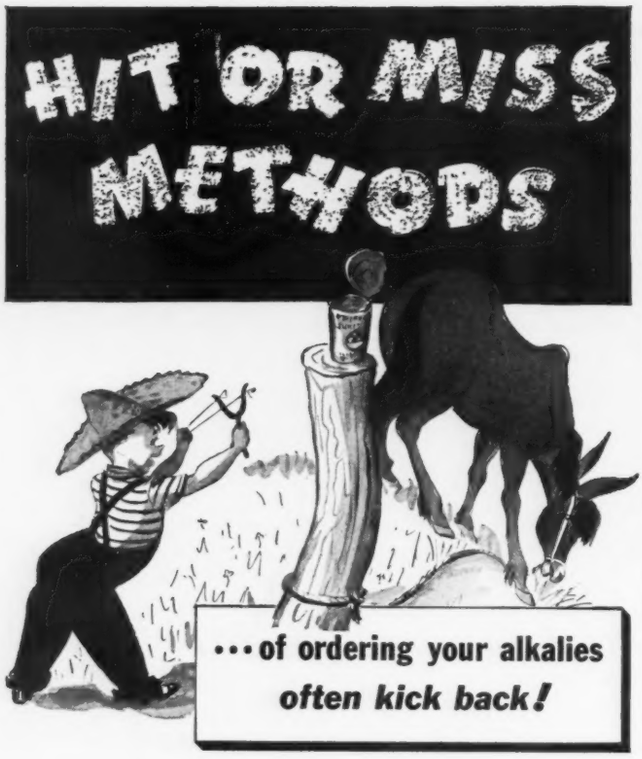
Contamination—and Control

Then there's the question of contaminants of all kinds. Your engineer never forgets the active agents that set busily to work on a fresh lubricant as soon as it's in. He has to know where oxidation may occur with each lubricant. He knows when the resulting sludge is apt to fill up oil grooves or clog feed lines.

At least, he knows all these things to watch for, and many others, too, if he's going to insure your bearings the care that they deserve. Shell has often helped, from its years of experience in a variety of bearing problems, to supply the one or two clues which may be all you need to improve your bearing operation or to lower your operating costs. Call in your Shell lubrication man. You and he have the same end in view . . . longer life for bearings.

SHELL

SHELL Industrial Lubricants



• • • *and kick back by influencing either the quality or the cost of your textile products.*

When you use Solvay Alkalies, you can depend on their high quality . . . depend on their constant uniformity at all times. Here are a few other dependable points to consider before you place your order for alkalies:

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NEWS ABOUT MEN

lands at New York World's Fair. The chimes will be installed in a tower to be constructed at Greenwood. He also purchased the electrical playing device originally with the chimes.

Lucius H. Taylor, secretary-treasurer of American Hosiery Co., Hartford, Conn., has retired, concluding 54 years of service with that company. **Roger W. Whitman,** president, has assumed the duties of treasurer.

J. H. Hammis, American Viscose Corp., was re-elected president of the Denier Club, New York. The Club will hold its annual outing early in June at some place in Westchester County to be selected.

Ernest K. Dimock, with Textile Banking Co., New York, for the last four years, has been placed in charge of sales promotion.

J. H. Davis, formerly president of Spofford Mills, Wilmington, N. C., has retired from that office, and has been made chairman of the board. His son, **J. H. Davis, Jr.,** succeeds him as president.

Harold E. Aken has been appointed vice-president in charge of cotton yarn sales of Cannon Mills, Philadelphia, Pa., succeeding the late Samuel M. Clapper. Mr. Aken is succeeded as cotton yarn representative in New York State by **P. H. Dalglish,** with headquarters at Utica, N. Y.

Frederick K. Nixon, selling agent of Riverside & Dan River Cotton Mills, New York, has been elected a vice-president of the company.

Thomas O'Keefe has resigned as sales manager of Berkshire Knitting Mills to become vice-president in charge of sales and a director of Magnet Mills, Clinton, Tenn. Mr. O'Keefe will open a New York office for Magnet about April 1 in the Empire State Building. Mr. O'Keefe will be succeeded with Berkshire by **Edwin Quinlan,** who has lately been midwestern representative for Berkshire.

Mrs. Pola Stout, fabric designer, will head a new department in the Women's Wear Fabric Division of Botany Worsted Mills, New York. She will develop a group of original designs to be merchandised on an exclusive basis to American creators of quality costumes.

Bernard Davis has been elected president of La France Industries, Inc., Philadelphia, Pa., and **Col. James H. Hayes** has been made chairman of the board.

R. E. Benson, Jr., of Woodward, Baldwin & Co., New York, has been elected director of the Association of Cotton Textile Merchants of New York, as have also **George M. Miller** of Turner, Halsey Co., **Rosser J. Smith** of Southeastern Cottons, Inc., and **E. W. Schumaker** of Nashua Mfg. Co.

John M. Bullard has been elected president of the board of Gosnold Mills, New Bedford, Mass. He succeeds **Henry H. Crapo,** who announced at the annual meeting that he declined to stand for reelection. **Bryant Prescott** was elected clerk to the board, a position formerly held by Mr. Bullard.

Alfred S. Reed is now president of Ripon (Wis.) Knitting Works, and **Stanley M. Herlin** is vice-president. **W. E. Haseltine** is chairman of the board and **H. A. Cody** continues as secretary-treasurer.

Joseph W. Valentine of New York, has become president of the Florence (Ala.) Cotton Mills.

I. J. Collins, president of the Anchor Hocking Glass Corp., Lancaster, Ohio, and **George P. Torrence,** vice-president and general manager of the Rayon Machinery Corp., have been elected to newly added directorships on the board of Industrial Rayon Corp., Cleveland, Ohio.

E. M. Deal is now president of New City Mills, Newton, N. C.

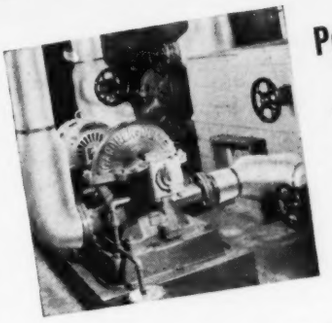
Joseph L. Barnett has been elected secretary of Trenton Cotton Mills and Dixon Mills, Inc., both of Gastonia, N. C., succeeding **Kay Dixon.**

Raymond H. Chase has been elected vice-president and treasurer of the Spindale (N. C.) Mills, having been promoted to that position from assistant treasurer.

James H. Porter, vice-chairman of the board of directors of Bibb Mfg. Co., Macon, Ga., has given the First Methodist Church of Covington, Ga., a memorial carillon, which has been named "McCracken Chimes," in honor of his late grandfather.

H. Clyde Moore, president of the Boston Wool Trade Association, presided at the 26th annual banquet of that Association at the Hotel Statler, Boston, on Feb. 8. The meeting was the largest on record,

BETTER PERFORMANCE IS IN THE CARDS
WHEN YOU CHOOSE GARDNER-DENVER CENTRIFUGAL PUMPS



Power Cost per Thousand Gallons Pumped: .0223c

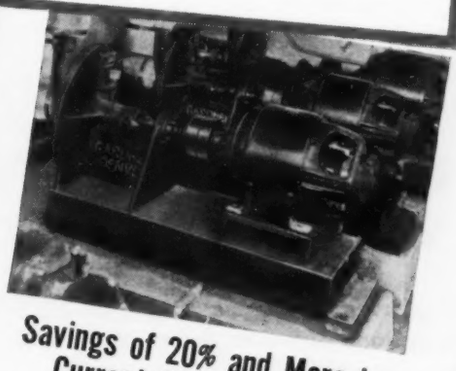
This Gardner-Denver electric motor driven 5" type "E" horizontally split-case centrifugal pump has pared power cost to .0223c per thousand gallons pumped. The unit pumps 1100 gallons per minute against a 180-foot head. Here is another plant operator who has found how to get tip-top performance at rock-bottom cost with Gardner-Denver.

Gardner-Denver Non-Clogging Centrifugals Make Sizable Savings in Power Costs

Sizable power savings are being made since installing four Gardner-Denver non-clogging centrifugals in this plant. These pumps replaced older centrifugals of another make, and had to be installed to fit existing conditions—an evidence of their adaptability to any type of installation.

Current for This Gardner-Denver Close-Coupled Centrifugal Cost Only 12c per Hour

This Gardner-Denver Close-Coupled Centrifugal Pump works 24 hours a day. Its capacity is 90 gallons per minute at a total dynamic head of 235 feet. Current cost is only 12c per hour. The owner says that he will buy no other make of pump—Gardner-Denver is his first choice.



Savings of 20% and More in Current Are Usual with Gardner-Denver Centrifugals

The photograph shows two 2½" type "B" side suction centrifugal pumps driven by 7½ h.p. 1750 speed motors, and one 2" type "B" Gardner-Denver centrifugal pump driven by a 5 h.p. 1750 r.p.m. motor. Pumps like these cover capacities up to 450 gallons per minute at heads up to 100 ft.

Pumps of special corrosion-resisting metals can be furnished for special application. We'll be glad to send you complete information about Gardner-Denver Centrifugal Pumps—write us for bulletins! Gardner-Denver Company, Quincy, Illinois; Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazelton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.

GARDNER-DENVER

SINCE 1859

There's Dirty Work at the Dye House!

Dirty work that was caused by a water supply containing just a fraction too much iron and calcium for consistently good results. Colors were dull, matching was difficult, and redyes were cutting heavily into production schedules and profits. . . . Those are conditions that the majority of America's important mills and finishers have remedied with a—

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At a cost of usually only a couple of cents per thousand gallons of water these highly efficient systems assure you of a constant supply of pure, 100% soft, iron-free water. . . . The kind of water that means better fabrics, whiter whites, brighter colors and the minimum of waste due to water impurities. An H. & T. System is a money maker from the start. . . . For an impartial survey to determine whether or not your water supply is detrimental to the quality of your products, write us today. There will be no fee, no obligation.

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HUNGERFORD & TERRY, INC.
WATER PURIFICATION PLANTS DESIGNED
INSTALLED *and* GUARANTEED
CLAYTON, NEW JERSEY

NEWS ABOUT MEN

with an attendance totaling 1,100.

W. Ray Bell was reelected president and **Charles A. Sweet,** of Wellington Sears Co., treasurer, of the Association of Cotton Textile Merchants of N. Y., on Mar. 12. **Saul F. Dribben,** of Cone Export & Commission Co., was elected vice-president. To serve with these officers as an Executive Committee were named: Floyd W. Jefferson, Iselin-Jefferson Co.; George M. Miller, Turner Halsey Co.; Frederic A. Williams, Cannon Mills.

Thomas M. Fitzpatrick has been elected president of Brown Durrell Co., Boston, Mass., succeeding his brother, the late Paul E. Fitzpatrick. The new president was formerly treasurer. **James P. Lynch** succeeds him as treasurer.

Richard Lennihan, for some years head of the Hamilton Woolen Mills, and later executive vice-president of Nashua Mfg. Co., has been elected president of LaSalle & Koch, retailers, Toledo, Ohio.

Benjamin Andrews has been elected president of Bokelmann Trimming Co., Long Island City, N. Y., lately acquired by Johnson & Faulkner, New York.

Arthur Storck, who joined the American Hosiery Co. in 1900 and 20 years later became associated with James Talcott, Inc., factors, who at that time controlled the American Hosiery Co., has been honored by that company in recognition of his long period of service.

C. A. Meister, Jr. and **Max** and **A. R. Schlesinger** have organized the Meister-Schlesinger Co., New York, to conduct a mill agency and cloth brokerage business. The firm has been appointed selling agent for the McElroy Mills, Fayetteville, N. C.

Leo Wolff, of Terhune, Yearance & Wolff, New York, has been elected to the board of directors of Raylaine Worsted, Inc., Manchester, N. H.

John B. Whitelock and **Samuel Kay** have formed the firm of Whitelock-Kay, Inc., New York, functioning as hosiery mill representatives.

Hartland Woodhouse has joined the organization of Mill Associates, New York, in connection with plans for the expansion of the piece goods department.

Harold M. Marks, for the last few years with Jacob F. Bernheimer & Bro., New York, has joined the Algonquin Printing Co. staff, to convert and supervise the merchandising of a new line of wash goods.

C. A. Davis has become vice-president and general manager of Spencer Mountain Mills near Gastonia, N. C. He came from Leaksville, N. C., where for the last five years he was associated with Marshall Field mills in different capacities.

Stewart W. Rabb, formerly vice-president and superintendent of Erlanger Cotton Mills Co., Lexington, N. C., recently resigned to establish a garment mill at Easley, S. C.

Robert F. Gregory succeeds to the position as head of C. C. Valentine & Co., New York, following the death of Charles C. Valentine. Mr. Gregory was with Union Mills for many years and joined C. C. Valentine & Co. in 1932.

Raymond J. Payne of Kannapolis and **H. C. Woodall, Jr.** of Smithfield attained the highest honors which textile students at North Carolina State College can secure at the hands of their fellow students, when they were recently elected superintendent and assistant superintendent, respectively, of the 1940 Students' Textile Exposition, which will be held in connection with the State College Style Show on April 25.

Harvey Ferguson, formerly superintendent of printing at Ware Shoals (S. C.) Mfg. Co., and later with Rock Hill Printing & Finishing Co., is now affiliated with the U. S. Navy Yard at Charleston, S. C.

Roy B. Horan, sales manager of the Artloom Corp., Philadelphia, has been elected a director of the company.

A. M. Stack is secretary and treasurer of Alamance Hosiery Mill, Graham, N. C., newly organized.

W. F. Robertson, Jr. has been promoted from superintendent to vice-president and general manager of North Carolina Finishing Co., Salisbury, N. C. **C. H. Patrick,** assistant superintendent since Sept. 1, has been made superintendent.

Graham Fisher, chemist at North Carolina Finishing Co. for two years, resigned in September to take a position with Hercules Powder Co., Wilmington, Del.

W. M. Black, superintendent of production at Kerr Bleaching & Finishing Works, Inc., Concord, N. C., resigned

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Hard knocks – far from weakening this lead – merely develop its latent strength. Therefore:

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IF YOU KNOW IT'S COLOR FAST

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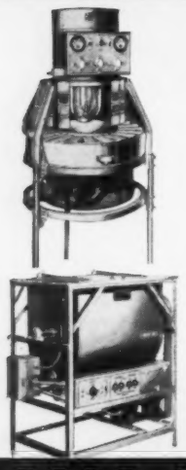

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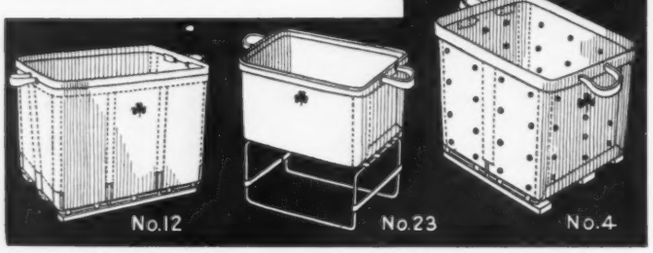


NEWS ABOUT MEN

the first of the year to go into the hosiery business with his brother at Midland, N. C. **W. P. Greene,** chemist, has been transferred to the dye house as overseer of pads and continuous machines. **A. R. Bookout,** recent graduate of High Point (N. C.) College, has been promoted to chemist.

Dr. Albert C. Walker, of Bell Telephone Laboratories, on March 6 addressed the American Association of Textile technologists in New York on "The Scientific Approach to Textile Problems."

Paul A. Barker succeeded **R. B. Rapp** on Mar. 1 with Clifton Yarn Mills, Clifton Heights, Pa. Mr. Barker and **C. A. Mitchell** represent Clifton in New York, though also maintaining headquarters at the mill.

Ralph B. Hood, for a number of years connected with textile plants in New England, has become assistant to **J. B. Harris,** vice-president of Greenwood (S. C.), Ninety-Six (S. C.) and Mathews Mills at Greenwood.

Clovis S. Powell, for 23 years with Ware Shoals (S. C.) Mfg. Co., and for the last two years superintendent of bleaching, has joined Aridye Corp., with offices at 205 Allen Bldg., Greenville, S. C. Mr. Powell was succeeded at Ware Shoals by **Ralph D. Greene,** recently affiliated with Calco Chemical Co. and before that with New England finishing plants.

Bliss Kizer, office manager, has been promoted to treasurer of Charles H. Bacon Co., hosiery mills, Lenoir City, Tenn., succeeding **Eugene B. Carter,** who is retiring.

Morris Magnier is to be manager and superintendent of the new full-fashioned hosiery mill of Van Raalte Co., Blue Ridge, Ga.

Douglas Tompkins, formerly head of Cutter Mfg. Co., Rock Hill, S. C., has resigned his position with Reading (Pa.) Cotton Mills, a position he has held for the past year, and will assume a new connection in the textile field.

William Van D. Jewett, former general manager of Farr Alpaca Co., Holyoke, Mass., is now associated with the Grosvenor Dale Co., No. Grosvenordale, Conn., in an executive position.

Harris L. Dunlap has accepted the position of plant chemist for Palatine Dyeing Co., Inc., St. Johnsville, N. Y. He was formerly research chemist for Sloan-Blabon, Inc., Philadelphia.

John Scott, former purchasing agent and yarn sales manager of the Pomona Mfg. Co., Greensboro, N. C., has resigned to enter the insurance business.

W. S. Pepperell, formerly purchasing agent for the Burlington Mills Corp., Greensboro, N. C., has become associated with the Carter Fabrics Corp., with units at Greensboro and South Boston, Va., in a similar capacity.

Charles E. Graveley has assumed his new duties as textile engineer for the Bemis Bag Co. at Talladega, Ala. He was formerly associated with the Draper Corp. at Spartanburg, S. C.

G. S. York has been appointed superintendent of Superior Yarn Mills, Long Island, N. C., having been promoted to this position.

A. Rigby has become superintendent of the Duplan Silk Corp., Grottoes, Va., succeeding **Wm. R. Rosendale.** Mr. Rigby came from Hazelton, Pa.

R. E. Douglas is opening his own office in Atlanta, Ga., where he will represent Southbridge Finishing Co., Lincoln Fabrics, Joseph Berlinger Co. and Henry Rosenzweig & Co.

Raymond Radcliffe, superintendent of Town House Hosiery Mill, Chilhowie, Va., has resigned to return to the Wallner Hosiery Mills in Pulaski, Va., with which he was associated five years ago. He is succeeded by **Troy Myers.**

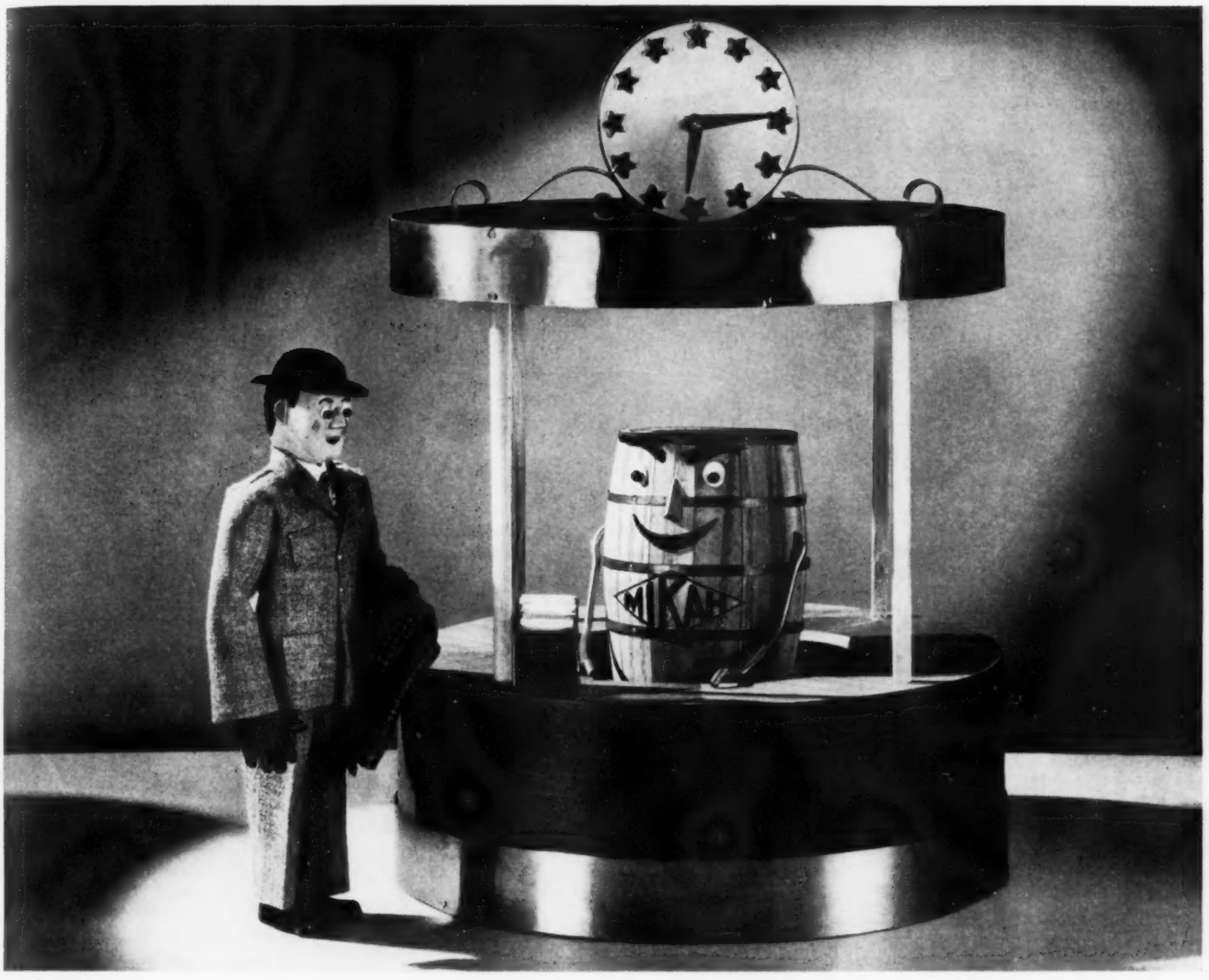
Ben Gluckman, former sales manager of the Brentwood Knitting Mills, Philadelphia, has joined the Revere Knitting Mills of Malden, Mass., in a similar capacity.

Helen Borski, employed by Cleveland Worsted Mills Co. for the last ten years and now engaged on time-study work, has been elected to membership in the executive committee of that corporation.

Julia C. Coburn, head of the Tobé-Coburn School for Fashion Careers, was elected president of the Fashion Group on Feb. 27. Marjorie Holligan of Celanese Corp. of America was chosen treasurer.

Pauline P. Alper, who recently resigned from American Viscose Corp., New York, has joined Wesley Simpson, Inc., New York, to direct sales promotion and publicity.

Norman T. Thomas, who became general superintendent at Pequot Mills, Salem, Mass., in 1936, has been made as-



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sistant general manager of the Naumkeag Steam Cotton Co., parent company of both Pequot Mills and Danvers Bleachery.

Ralph B. Shaw, formerly with Stillwater Sales Co., New York, has joined the New York City sales staff of the Worsted Division of Pacific Mills.

Arthur L. Lazarus has become associated with Artistic Finishing Co., Brooklyn, N. Y., where he will supervise plant operation and sales.

William J. Lyons has resigned from Southeastern Cottons, Inc., New York.

James W. Wooster, who has been associated with the Spool Cotton Co., New York, since its inception in 1898, is about to retire. He had recently been in charge of sales to the New York jobbing trade.

Leon Ormsby has been appointed superintendent of Scotland Sheeting Mills, Laurinburg, N. C.

J. C. Jolly has assumed his new duties as superintendent of the Mayo (S. C.) Mills, formerly known as Mary Louise Mills.

T. L. Edwards has become superintendent of the Profile Cotton Mills at Jacksonville, Ala.

W. O. Ruffin, formerly of Siluria, Ala., has become superintendent of the Micolas Cotton Mills and the Opp Cotton Mills, both of Opp, Ala.

Wm. R. Connelly has been made assistant superintendent of the Hampton Division of Pacific Mills, Columbia, S. C., and **Harry Sheely** has been named spinning room overseer and **Ward Hammond** overseer of carding at the Capital City plant.

Joe Balloch is the new superintendent of Renfrew Bleachery, Travelers Rest, S. C. He succeeds **C. L. Eddy.**

Cecil W. Broome, formerly with Brown Bros. Hosiery Mill, Hickory, N. C., has accepted the position of manager of Imperial Hosiery Mill, Mocksville, N. C., succeeding **S. S. Short,** who resigned to go to Chicago, Ill., where he has joined the Puritan Cordage Co. in a similar capacity.

Herbert Goldberg has become superintendent of Algodon Mfg. Co., Belmont, N. C.

Wm. R. Tornquist, formerly superintendent of printing at Hartsville (S. C.) Print & Dye Works, is now superintendent of Clearwater (S. C.) Mfg. Co., succeeding **Joseph Houth** who was promoted to general manager following the death of Murray Bulford.

V. D. Snyder, formerly overseer of weaving at Victor plant of Victor-Monaghan Co., Greer, S. C., recently resigned to become general overseer of weaving at Mathews Cotton Mills, Greenwood, S. C. Mr. Snyder at one time was overseer of weaving at Drayton Mills, Spartanburg, S. C., and prior to that had worked in the weave room at Judson Mills, Greenville for 18 years.

Robert C. Day, for several years associated with the Farr Alpaca Co. has taken a position with the American Tissue Mills, Holyoke, Mass.

C. M. Hall has resigned as superintendent of the Georgia Hosiery Mills, Blakely, Ga., and has been succeeded by **C. D. Jay.**

H. F. Graham has resigned his position with Judson Mills, Greenville, S. C., and become overseer of weaving, No. 1, at Brookside Mills, Knoxville, Tenn.

Albert E. Webster, superintendent of the American Thread Co., Holyoke, Mass., is to retire July 1, when he will complete 50 years with the company. He has been with the Holyoke mills all of that period.

Harold M. Peters, recently with Carson, Pirie, Scott & Co., Chicago, has joined the Rayon Division of E. I. du Pont de Nemours & Co., as salesman in the southern district, with headquarters in Charlotte.

Joseph A. Golden, who has had long experience in styling and selling tropicals, has become associated with the American Woolen Co., New York.

W. C. Deming has assumed his new duties as assistant superintendent of Schwartzenbach-Huber Co., Front Royal, Va.

A. Rigby is now superintendent of the Duplan Silk Corp., Grottoes, Va., succeeding **William R. Rosendale.**

William H. Shumate is the new superintendent at the Cutter Mfg. Co., Rock Hill, S. C.

William H. Hodgman of Auburn, Maine has resigned as general manufacturing superintendent for the Deering, Milliken & Co. woolen mills in Maine.

Earl Dunnaway has been appointed assistant superin-

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She admires, but has come to *expect* the absolute perfection of today's stockings. The manufacturer's task of not only achieving that perfection, but maintaining it unvaried in dozen after dozen pairs is not an easy one. It is to end his many "headaches" in boarding that the Proctor Automatic Machines were designed . . . and the long list of prominent installations* attest to these machines' achievements.

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If you finish light, medium or heavy weight, seamless or full fashioned hosiery for women or men, a Proctor Automatic Boarding Machine can bring you important money-saving advantages.

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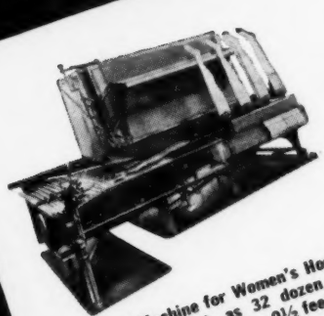
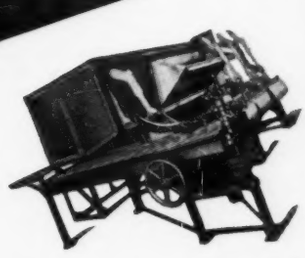


Automatic Machine for Women's Hosiery. Production as high as 32 dozen pairs per hour. 11½ feet wide by 9½ feet deep.



Automatic Machine for Men's Half Hose. Production as high as 52 dozen pairs per hour. 10½ feet wide by 9½ feet deep.

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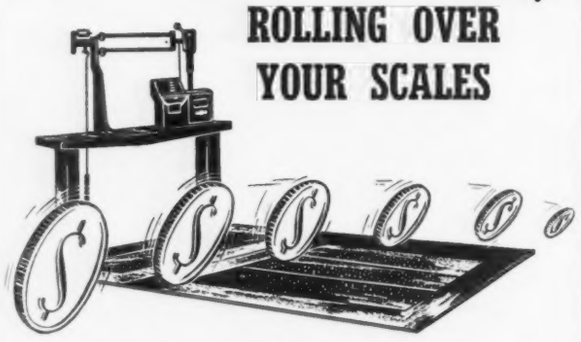

Throughout your mill, from receiving through production and out the shipping door, every time a pound of your product passes a strategic weighing point, you roll real money over your scales. Modern Howe Scales, long-lived with low cost maintenance for accuracy (from 1/64 oz. to 30 tons) protect you against costly losses. Write today for new folder, "Howe Scales for Every Weighing Purpose." The Howe Scale Company, 603 Scale Avenue, Rutland, Vermont.

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WILLIAM WHITMAN COMPANY, Inc.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE

tendent of the Hamrick Mills, Gaffney, S. C., and **Joe Sullivan** has been made assistant superintendent of the Limestone Mills, both companies controlled by the same interests.

John Burton is now in charge of spooling, winding and warping for Mooresville (N. C.) Cotton Mills. He was formerly associated with Calhoun Mills.

R. L. Sauls has been appointed superintendent of Hudson Narrow Fabric Mills, Easley, S. C.

B. P. Henry has become superintendent of Dallas (Ga.) plant of Dalla-Noval Yarn Mill.

Joseph Sullivan has become assistant superintendent of the Limestone Mills, Gaffney, S. C.

Paul J. Delbac, of New Bedford, Mass., has joined the staff of Warren Print Works, West Warren, Mass.

William C. Charette has resigned as an overseer at Wyandotte Woolen Mill, Rochester, N. H.

Lawrence Lee has joined the designing department of Eagle & Phenix Mills, Columbus, Ga.

L. N. Hale has become production manager of Drayton (S. C.) Mills.

E. B. Shaw has resigned as superintendent of American Thread Co., Dalton, Ga., and has been succeeded by **W. Preston Dunson.**

J. W. Rowell, formerly with Cherry Cotton Mills, Florence, Ala., has become overseer of carding and spinning at Floyd Mills, Rome, Ga.

Joseph Oberhauser has become superintendent of Albert J. Bartson Co., Charlotte, N. C.

Obituary

Henry Potter McKenney, 81, at one time an outstanding merchant in the wool goods field, died at his home in Suffern, N. Y. Feb. 25. He began his business life in 1875. A few years later he joined Macintosh, Greene & Co., and 12 years later became head of that firm. The firm name went through several changes and ultimately became H. P. McKenney & Co. He retired in 1934.

Samuel Lownds, 86, president of S. Lownds & Sons, Bridgeport, Conn., manufacturers of elastic webbing, died Feb. 7.

Wilfred E. Pike, 51, who retired in 1938 after more than 10 years as president of Opal Hosiery Mills, Philadelphia, died Feb. 17 at his home in Philadelphia.

Abner P. Davol, 87, an executive of Pocasset Mills, Fall River, Mass., from 1873 to 1893, died in that city Feb. 24.

Alpheus P. Riker, 70, assistant manager, American Woolen Co., New York, died early in March.

Henry R. Russell, 76, retired, one time president and treasurer of S. N. & C. Russell Mfg. Co., Pittsfield, Mass., died at Winterhaven, Fla., March 2.

Walter E. Woodrow, 41, district superintendent of Autocall Co., died at Atlanta, Ga., March 4.

George W. Fogleman, 79, pioneer hosiery manufacturer, died recently at Burlington, N. C. He established the Burlington Hosiery Mills in 1891, and was later an official at hosiery mills in Gibsonville.

Charles Newton Brown, 82, founder and since 1920 president and treasurer of the Lincoln Cotton Mill Co., Evansville, Ind., died Feb. 14. He was with Rhode Island mills until he went West about 45 years ago.

John R. Rodgers, aged 75, president and largest stockholder of the Hart Cotton Mill, Tarboro, N. C., died Feb. 15 at Norfolk, Va.

Philip Stockton, 65, former president of the First National Bank of Boston, and an important figure in the financing of a number of textile companies, died Feb. 11.

Richard M. Chatham, 74, son of the co-founder of the Chatham Mfg. Co., Winston-Salem, N. C., died late last month.

B. Edmund David, 71, retired silk manufacturer who founded the firm of B. Edmund David Co. in 1908, died Feb. 17.

Charles M. Brown, 82, president and treasurer of Lincoln Cotton Mills Co., Evansville, Ind., died recently.

Edwin M. Dannenbaum, 66, who retired in 1931 after an association of 40 years with the Pine Tree Silk Mills of

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Though new, N-25 has already been proven in mills everywhere as an outstanding product for scouring, dyeing, soaping off, laundering, washing, boiling off or wetting out. In every case it has shown an excellent degree of detergency at all temperatures, high sudsing action, and superior wetting-out and penetrating properties.

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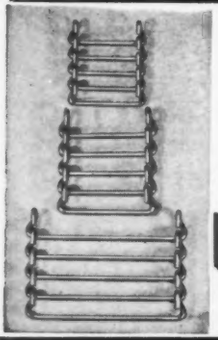

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LESS BREAKAGE
LONGER SERVICE
LOWER OPERATING COST
LONGER UNIFORMITY OF PRODUCT

THOMAS & SKINNER STEEL PRODUCTS COMPANY

1119 East 23rd Street — Indianapolis, Indiana

NEWS ABOUT MEN

Philadelphia, died at Oak Lane, Pa., Feb. 17.

Paul E. Fitzpatrick, 60, for 20 years president of Brown & Durrell Co., New York and Boston, died at Brookline, Mass. Feb. 22.

John P. Pirie, about 69, president of Carson, Pirie, Scott & Co., Chicago, of which his father was a co-founder, died Feb. 25.

George W. Fogleman, 79, pioneer hosiery manufacturer, who in 1891 founded the Burlington (N. C.) Hosiery Mills, died at Burlington recently.

James F. Clarity for more than 40 years associated with Woodward, Baldwin & Co., New York, died recently.

William B. Ferguson, 70, formerly senior partner of R. Ferguson Co., shuttle manufacturers, died at Morganton, N. C., Feb. 23.

Robert L. Stebbins, for more than 40 years in the textile export business, died recently at his home in Malverne, L. I.

Anson A. Voorhees, 76, who was former head and for many years connected with the dry goods firm of J. E. Williams & Co., New York, died in Tucson, Ariz., recently. He had retired in 1924.

Walter Rigby, aged 75, for 40 years associated with the Bibb Mfg. Co., Columbus, Ga., plant, and for a long number of years technologist, died recently.

Robert S. Thompson, secretary and auditor of Kenneth Cotton Mills, Walhalla, S. C., died last month at Anderson, S. C.

John J. Fasmer, 56, general sales manager of Stephens-Adamson Mfg Co., Aurora, Ill., and active with the firm since its founding in 1901, died Feb. 3.

Edward McCabe, 86, for 41 years affiliated with Apponaug (R. I.) Co., died at his home in that place on Feb. 22. He retired in 1938.

Richard J. Lavalle, 22, editor of Berkshire Woolen Company's house organ, was killed in an automobile accident Feb. 10 at Dalton, Mass.

John Henry Martin, 32, comptroller at Rock Hill (S. C.) Printing & Finishing Co., died at his home on Feb. 18.

Curtis H. Stiles, 58, associated with the old New England Yarn Co., and later with Union Mills and Manomet Mills, died in New Bedford, Mass. Feb. 8.

Edward Mason, 63, formerly superintendent of American Finishing Co., died recently in Memphis, Tenn.

Albert John Swinson, superintendent of Whitin Machine Works plant, Charlotte, N. C., died recently at his home in Charlotte.

William Joseph Kenney, 80, retired silk manufacturer, died at Milford, Pa. Feb. 27. He had been connected with the Holland Silk Co., New York, for 60 years until his retirement in 1937.

John H. Martin, comptroller of Rock Hill (S. C.) Printing & Finishing Co., died last month.

William Theodore Richter, 65, an accountant with Botany Worsted Mills, Passaic, N. J. and associated with that firm for 42 years, died at his home in Glen Rock, N. J. last month.

Michael E. Manley, 55, formerly salesman for Empire Silk Dyeing Co. and for Standard Silk Dyeing Co., of Paterson, died recently in Jersey City, N. J.

C. B. Crowell, of the worsted yarn selling house of Richard E. O'Brien, Boston, Mass., died in Providence, R. I., Feb. 8.

Myron H. Powell, 73, president of Amazon Knitting Co., Muskegon, Mich., of which he was the founder, died in Grand Rapids late last month.

Lewis L. Sluck, 77, retired founder of the Best Made Hosiery Mill, Quakertown, Pa., died in Allentown, Pa., last month.

Albert Sydney Riviere, 55, knit goods technical expert for Union Special Machine Co., died in Gulfport, Miss., last month.

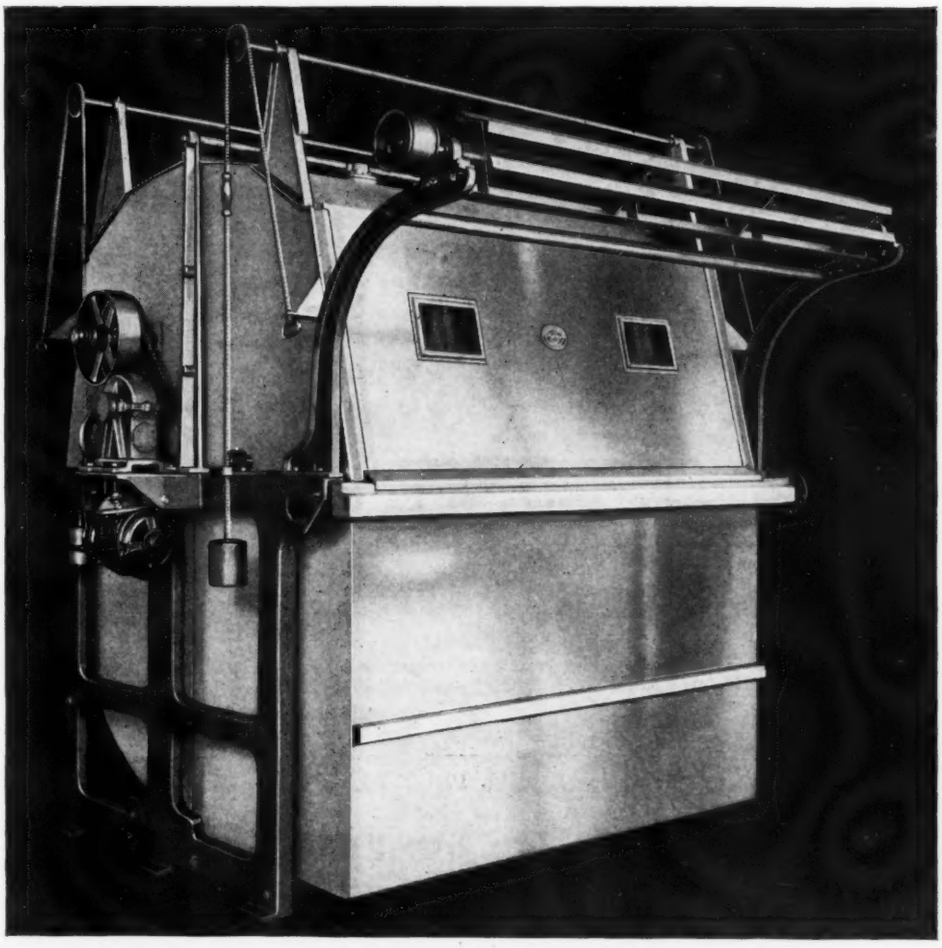
Eugene A. Arapian, sales manager of the Cleveland District for William Carter Co., and associated with that firm since 1912, died recently.

William W. Silverman, 53, for the last five years sales manager of the Brownie Knitting Mills, New York, died recently.

Carlton C. Easton, 63, picker room overseer at Hillsborough Woolen Mill for 35 years, died in Hillsborough, N. H., Jan. 15.

Harry M. Gerhart, 57, foreman in William G. Leininger & Co., Inc., Mohnton, Pa., for 34 years, died at his home in Fritztown, Pa., Feb. 5.

THE NEWEST AID TO BETTER PIECE DYEING AND BLEACHING



In keeping with the most exacting modern demands for better piece dyeing and bleaching equipment, Hunter offers its new Model NK Stainless Steel Piece Dyeing and Bleaching Kettle.

As modern as 1940, the new Stainless Model NK offers the user these distinct advantages among others:

(1) **Completely vibrationless construction—all driving and driven members supported in newly designed separate frames.**

(2) **Vari-speed drive for main reel for greater flexibility.**

(3) **A size and type for any piece dyeing or bleaching requirement.**

(4) **Tight top enclosure which is windowed and lighted . . . saves up to 35% of steam for the dyeing cycle.**

(5) **Proved performance on fabrics ranging from mohair plushes, tapestries, woolens, worsteds, unions, blankets, to rayon suitings.**

If you contemplate replacing or expanding your present dye house units, it will pay you to ask Hunter for details. Write or call.

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

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Founded 1847

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JAMES HUNTER MACHINE COMPANY North Adams, Mass.

Southern Agent: **Carolina Specialty Co., Charlotte, N. C.**

Western Rep.: **E. G. Paules, 343 Bendix Bldg., 1206 Maple St., Los Angeles, Calif.**

RYERSON CERTIFIED STEELS

Large Stocks... Uniform High Quality... Immediate Shipment... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.

There will be an important
PRICE CHANGE
on
SCOTT TESTERS*
EFFECTIVE MARCH 1, 1940
HENRY L. SCOTT CO.
Providence, R.I., U.S.A.
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Have you tried—
Booth
Quality
Card Clothing
BENJAMIN BOOTH CO.
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TEXTILE MILL NEWS

Cotton Mill News

Avondale Mills, which operates plants in seven Alabama cities, Alexander City, Pell City, Sylacauga, LaFayette, Stevenson, and Birmingham, is going forward with its modernization program at these units, which will represent a total expenditure of about $750,000. About $500,000 of this will be spent in Pell City including construction of a new building for inspecting, grading and handling. The opening and preparatory departments of all the plants are being modernized. Improved winding machines have been installed and long-draft has been widely adopted.

Belton (Tex.) **Yarn Mills** are to be reorganized and equipped for operations.

Candlewick Yarns Mfg. Co., Dalton, Ga., is the new branch plant of the same company with home plant at Cartersville, Ga. It has taken over the plant formerly occupied by Primrose Spreads, Inc.

Cannon Mfg. Co., York, S. C., unit of Cannon Mills Co., Kannapolis, is installing $100,000 worth of new machinery and having the present machinery modernized.

Samuel Chettle has set up three lace making machines at Coventry, R. I., and Harold H. Hayes has established a lace finishing plant at West Warwick, R. I.

Corriher Cotton Mills, Landis, N. C., are installing machinery in two-story addition, 102 x 175 ft., recently completed, to include about 8,000 spindles and 80 carding machines, designed to double the capacity of the mill.

Cowpens (S. C.) **Mfg. Co.,** recently sold to George Norwood and associates under R.F.C. order for $47,500, has in turn been sold by Mr. Norwood to W. S. Griffin, Jr., of Greenville, S. C., who represented R. C., McCall, Easley, S. C., and D. T. Manget, Newnan, Ga. The sale did not include machinery or village.

Dominion Fabrics, Ltd., Dunnville, Ont., will install more looms and 1,000 ring spindles in its plant at Welland, Ont. The cost will be nearly $30,000.

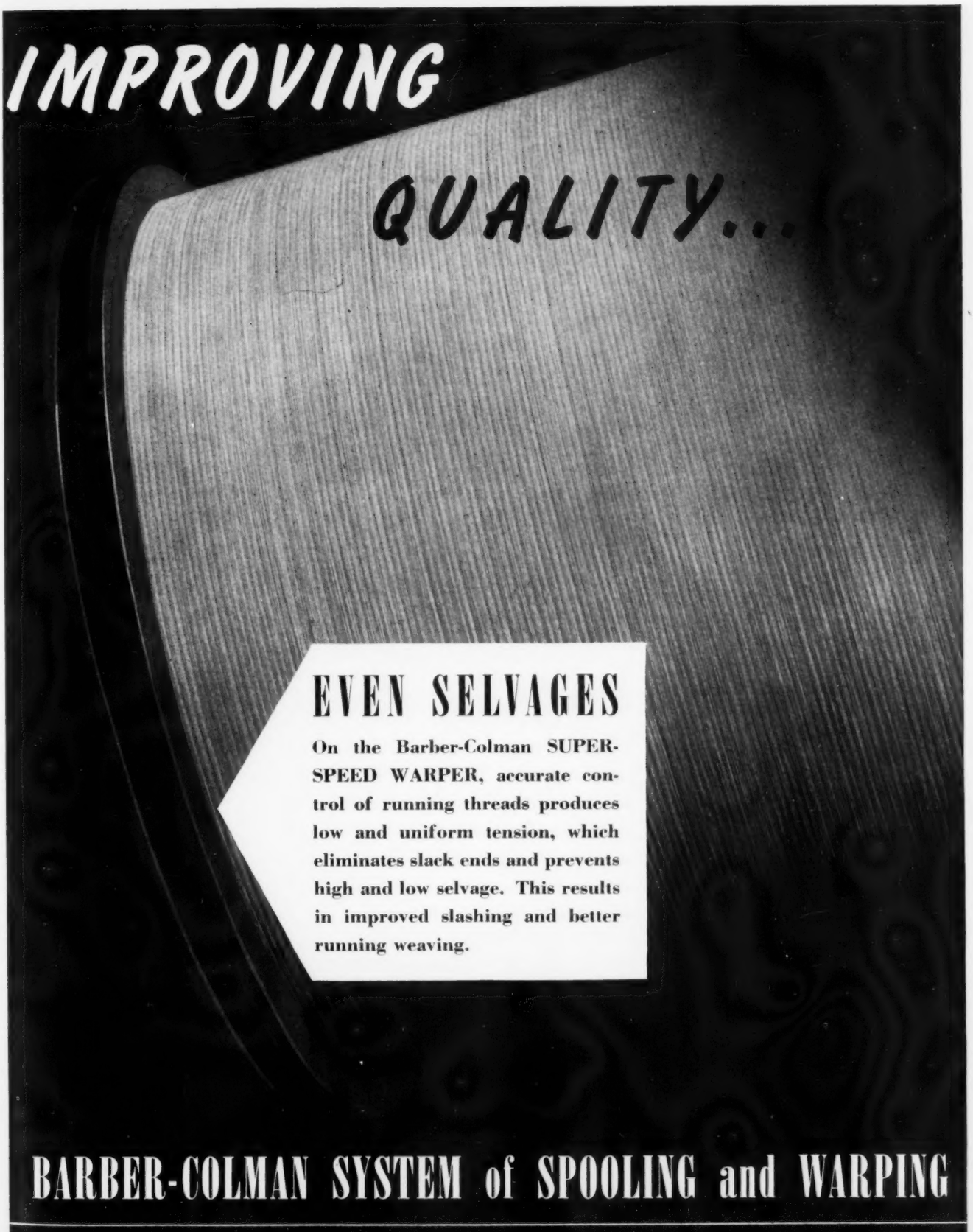
Erwin Mfg. Co., Huntsville, Ala., mill has been acquired by Charles A. Poellnitz, Florence, Ala., and associates, who are reported planning to operate it.

Fickett Cotton Mills, Inc., White Hall, Ga., is starting manufacture of cotton yarns, mops and cotton specialties, after nearly a year of preparation.

Gastonia (N. C.) **Combed Yarn Corp.** has installed 22 additional spinning frames of 220 spindles each, which in-

MILL PROFIT-AND-LOSS STATEMENTS

	1939	1938
Pacific Mills	798,831	−2,531,245
Riverside & Dan River Cotton Mills	446,727	−1,017,227
Wayne Knitting Mills	408,163	232,282
Tubize Chatillon Corp	1,138,955	281,934
William Whitman Co	72,853	74,683
Naumkeag Steam Cotton Co. (to Nov. 30)	24,445	125,424
Gosnold Mills	96,416	−181,578
Cleveland Worsted Mills Co	500,305	−102,705
Holeproof Hosiery Co	141,641	−58,586
Fruit-of-the-Loom, Inc	142,236	25,000
Celanese Corp. of America	6,374,101	2,479,748
Skenandoa Rayon Corp	228,780	43,314
Brighton Mills	17,886	−14,698
Montreal Cottons, Inc	622,473	271,702
Marshall Field & Co	4,636,558	3,492,238
Phoenix Hosiery Co	481,143	120,175
Graniteville Co	375,999	26,215
Worumbo Mfg. Co. (to Nov. 30)	−110,256	−326,090
Atlantic Rayon Corp	131,600	−72,029
Interstate Hosiery Mills	223,988	212,183
Gotham Silk Hosiery Co	155,981	237,797
Rollins Hosiery Mills	116,008	145,616
Davenport Hosiery Mills	247,413	262,687
Pilgrim Mills	32,000	−9,600
Hartford Rayon Corp	68,007	−42,647
New Jersey Worsted Mills	371,618	64,818
Utica Knitting Co	216,772	−41,244
Belding Heminway Co	402,355	322,242
Van Raalte Co	901,658	671,967
Globe Knitting Works	148,744	66,964
Powdrell & Alexander	184,452	−10,082
Newmarket Mfg. Co	238,882	56,702
Monarch Knitting Co., Ltd	101,248	−53,184
Winsted Hosiery Co	63,814	50,827
Soule Mill	−81,582	−72,883
Industrial Rayon Corp	1,348,923	.....
Nashawena Mills	84,987	−49,618
Norquitt Mills	128,514	239,909
Dominion Woolens & Worsteds, Ltd	113,935	−182,796
Courtaulds, Ltd	£1,581,255	£352,265



EVEN SELVAGES

On the Barber-Colman SUPER-SPEED WARPER, accurate control of running threads produces low and uniform tension, which eliminates slack ends and prevents high and low selvage. This results in improved slashing and better running weaving.

BARBER-COLMAN SYSTEM of SPOOLING and WARPING

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FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

AMERICAN

Case 1764
Style 1235-16
No 12345
Yards 56⅞ 56⅝

The New AMERICAN SPEED SET GEAR CONSTRUCTION NUMBERING MACHINES

Designed Especially For MARKING TEXTILE MILL TAGS, TICKETS, LABELS, ETC.

Modern textile merchandising demands CLEAR, EASILY READ piece, lot and case numbers, size and yardage lengths, etc. Supply this demand and use the new American Speed Set Gear Construction Numbering Machines. Such numbering with Speed Set machines can be done quickly and easily. Numbers change instantly with touch of fingers and ANY COMBINATION OF NUMBERS can be quickly obtained. All steel wheels, deeply engraved figures, self-inking.

Eliminate errors and see that your tags, tickets, labels, etc., are attractively and legibly numbered the SPEED SET way. WRITE TODAY FOR FOLDER describing these new machines used in Cotton, Woolen, Hosiery, Knit Goods, and Dyeing and Finishing Plants.

American Numbering Machine Co.
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Braiders
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Fringe & Tassel Machines
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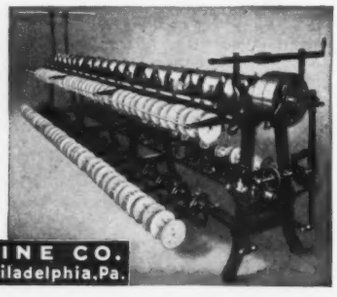
Pocket Folding Machines
Special Machines designed and built

For efficient multiple-spool winding with uniformly smooth lay. Wooden or paper spools. Winds from barrel or pin swifts, cops, cones, etc. Write for catalog.



FIDELITY MACHINE CO.
3908-18 Frankford Ave., Philadelphia, Pa.

TEXTILE WORLD'S
KNITTING
SHOW NUMBER
will be published in
April

TEXTILE MILL NEWS

creases company's total spindles to 39,420.

Gem Yarn Mills, Cornelius, N. C., has modernized and enlarged their spinning department discarding 1,632 spindles and adding 2,248, which increases the concern's capacity to 11,384 spindles.

Gosnold Mills, New Bedford, Mass., are installing 288 new automatic looms at estimated cost of $240,000.

Hartsville (S. C.) **Cotton Mills** have work under way on changing all their spinning to SKF paper tubes, with the Saco-Lowell Shops supplying the new spindles.

Hudson Narrow Fabrics Mills, Easley, S. C., newly organized, with Edgar C. Martin of Greenville, S. C., president and treasurer, will operate seven looms.

Manetta Mills, Lando, S. C., have installed 50 Crompton & Knowles looms, 85-inch, for manufacture of flannels.

Mayo Mills, Inc., chartered with capital of $100,000 under State laws, to take over the former Mary Louise Mill, Mayo, S. C., have begun production of cotton yarn to be processed at Neisler Mills, Kings Mountain, N. C. C. E. Neisler, Jr., president of last noted company, is vice-president of Mayo Mills, Inc.; J. C. Neisler is president.

Melville Mills, Inc., Lincolnton, N. C., has completed installation of 1,000 additional spindles.

Micolas Cotton Mill and **Opp Cotton Mill,** Opp, Ala., both under same management, have inaugurated an extensive modernization program. At the Micolas plant 300 new Model X Draper looms are being installed; all of the spinning equipment is being overhauled and converted into long-draft spinning; and all roving machines are being changed over to Whitin Inter-draft. One Abbott winder is being installed also. At the Opp plant 115 new Model X Draper looms have been installed; three new Abbott winders; and new Whitin Inter-draft roving machines. All the spinning equipment is being overhauled and converted to long-draft.

Nashua (N. H.) **Mfg. Co.** plans immediate restoration of portion of mill recently damaged by fire, with loss sustained in blanket mill, Indian Head cloth room, sheeting department and other divisions.

Oconee Mills, Inc., Westminster, N. C., a subsidiary of Beacon Mfg. Co., Swannanoa, N. C., is building addition to provide for increased weaving machinery.

Pacific Mills, Lyman, S. C., is constructing two warehouse additions, the work when completed to cost approximately $100,000.

Rock River Cotton Co., Janesville, Wis., plans three-story addition, about 45 x 90 ft., for expansion. Cost estimated close to $40,000.

Scotland Sheeting Mills, Inc., Laurinburg, N. C., has begun operation with 140 looms on 90 to 99-inch sheeting. Edwin Morgan of Laurel Hill, N. C., is president; H. M. Jones, treasurer, and Leon Ownsby, superintendent.

Springs Cotton Mills, Fort Mill, S. C., has superstructure in progress on one-story addition, 200 x 300 ft., scheduled to be equipped and ready for service early in July. It is estimated to cost about $400,000, including sufficient new spindles to make a total of 104,000 spindles at the two local mills of company.

Swift Mfg. Co., Columbus, Ga., has completed erection of a one-story weave shed, 210 x 290 ft., to replace former mill unit used for this service.

Wampum Mills, Lincolnton, N. C., which had been partially dismantled, are now being re-equipped with machinery purchased from Wiscassett Mills at Albemarle, N. C., and another mill at Chattanooga, Tenn., and will soon begin operations on 50s to 60s yarn, using 15,256 spindles. The building is also being renovated.

Wool Mill News

American Axminster Mills is being established at Amber St. and Allegheny Ave., Philadelphia, to be operated on carpet specialties.

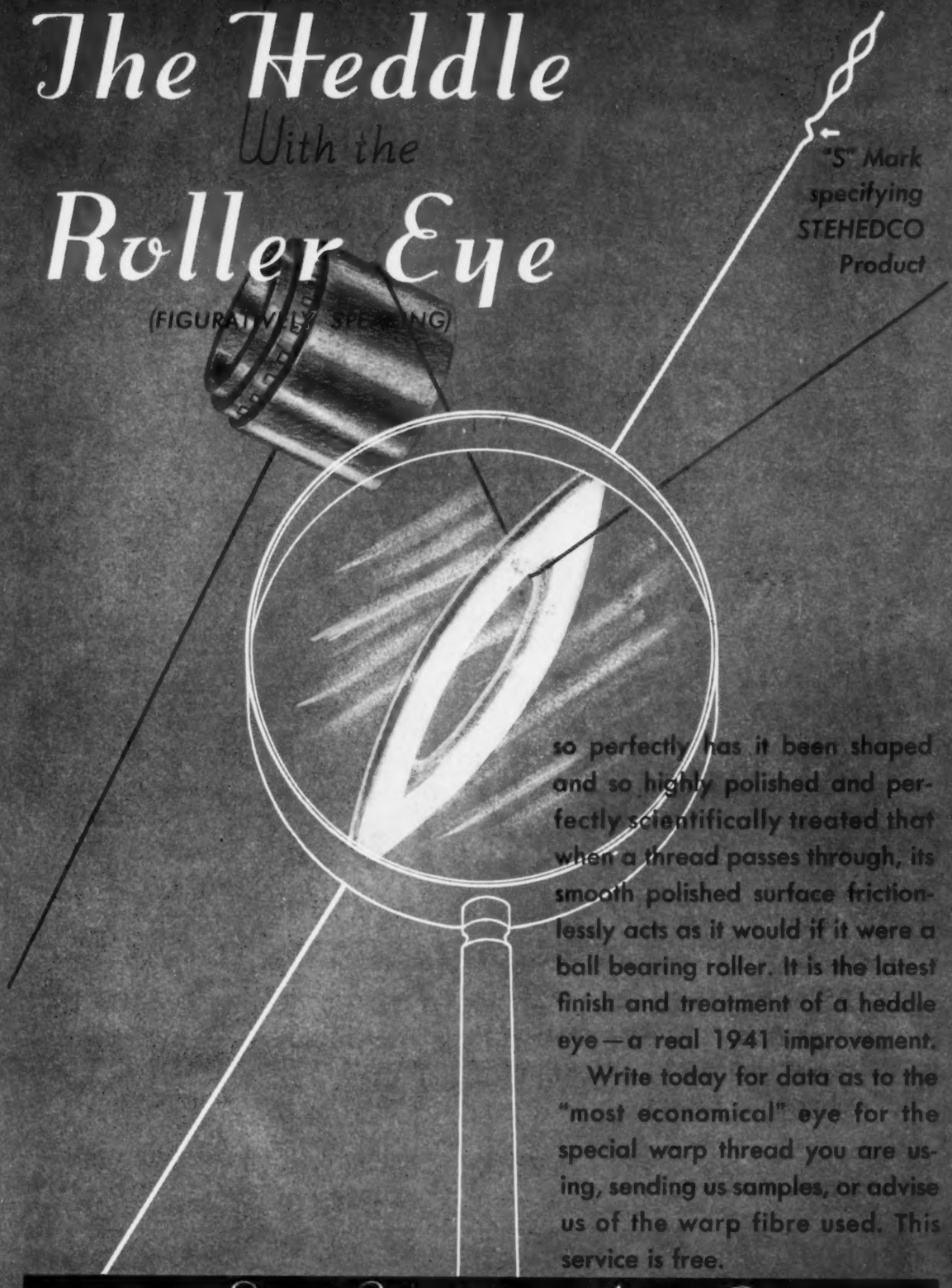
Farr Alpaca Co., Holyoke, Mass., has taken the first definite step in the long anticipated sale of its property to Berkshire Fine Spinning Associates, Inc., Adams and Pittsfield, Mass. A deed was filed Feb. 23 transferring the real estate of the Holyoke company to a subsidiary known as F. A. Properties, Inc., in compliance with instruction of stockholders at a special meeting Feb. 23. The sale was agreed upon on March 8 to be at a specified price of $675,000.

Hampton Looms, Inc., Bedford, Va., have nearly completed one-story addition, 82 x 168 ft., and will have ready for service early in the spring. Cost estimated about $70,000.

Huntington (Mass.) **Textile Co.** will add more modern

The Heddle With the Roller Eye

(FIGURATIVELY SPEAKING)



so perfectly has it been shaped and so highly polished and perfectly scientifically treated that when a thread passes through, its smooth polished surface frictionlessly acts as it would if it were a ball bearing roller. It is the latest finish and treatment of a heddle eye—a real 1941 improvement.

Write today for data as to the "most economical" eye for the special warp thread you are using, sending us samples, or advise us of the warp fibre used. This service is free.

Steel Heddle Mfg. Co.

"STEHEDCO" HEDDLES · REEDS · FRAMES AND HARNESS ACCESSORIES.

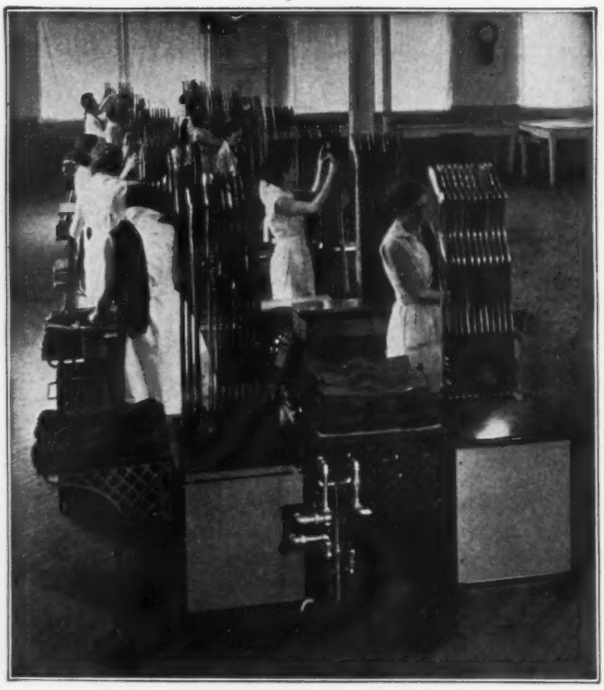
2100 W. Allegheny Avenue PHILADELPHIA, PA.

BRANCH OFFICES ALL OVER THE WORLD

PARAMOUNT DUAL HEAT

1000 DOZENS DAILY

HOSIERY FINISHING



A PRODUCTION in excess of 1,000 dozens full fashioned ladies' hosiery is being finished daily on the 13 PARAMOUNT DUAL HEAT MACHINES operated in this mill during one eight-hour shift—and the character and quality of the work is incomparable since the PATENTED DUAL HEAT principle of drying is positive protection against "baking" delicate silk fabrics. Not only does the PARAMOUNT DUAL HEAT MACHINE contribute outstanding features of production and quality, but it represents—

1. Less investment per dozen
2. A minimum of floor space occupancy
3. Less power and steam consumption per dozen
4. Ideal room and working conditions
5. Less maintenance
6. Ease and comfort to the operator
7. Simplicity and durability of construction

Any one feature alone, of the numerous advantages which the PARAMOUNT DUAL HEAT MACHINE offers, will justify a change to this superior method of hosiery finishing.

WRITE FOR DETAILS

Furnished on SALE or RENTAL Plan.

PARAMOUNT TEXTILE MACHINERY CO.

538 South Wells Street Chicago, Illinois

machinery this spring according to Donald V. Messer, president.

Livingston Worsted Mills, Holyoke, Mass., is buying eight new Crompton & Knowles automatic looms of the W-3 type.

Park Mill, Sabattus, Me., has been bought by the Royal Woolen Co., Joseph R. Loper, president, for $19,000. It will be run on army blankets.

Spinners, Ltd., Huntingdon, Que., has been organized with a capital of $100,000, to run a small worsted spinning plant. Whitin frames and Prince-Smith combers have been purchased; product will be about 6,000 lb. of weaving yarn weekly. F. E. Cleyn, president and manager of the new firm was formerly with the La Vesdre Mills, Belgian Society of Combing & Spinning, Brussels and Verviers, Belgium.

Rayon & Silk Mill News

Canadian Celanese Corp., Montreal, will expend $1,000,000 on extension of the Drummondville plant to increase production.

Clarileen Fabrics Corp., Orange, Va., has filed notice of organization with capital of $50,000, to operate a local mill for the production of rayon fabrics. Louis Teillon, Orange, is company representative.

Collins & Aikman Corp., Bristol, R. I., will build a four-story spinning mill, 140 x 148 ft. W. A. Parker, Philadelphia, Pa., is engineer. The building will be of brick, stone and wood construction.

Corona Velvets, Ltd., Drummondville, Que., closed for the last two years, will be reopened by A. C. Roux of that city, under the name of "Canadian Royal Velvets Reg'd." producing a line of transparent velvets. The plant is at 452 Heriot St.

Esther Mill Co., Shelby, N. C., is installing machinery necessary for the manufacture of a fine grade of rayon goods.

Johnson & Faulkner, 45 East 53rd St., New York, distributors of upholstery fabrics, have taken over Bokelmann Trimming Co., Astoria, L. I., N. Y. The plant will be operated by Johnson & Faulkner to produce gimp, braid, and other upholstery trimmings on special order.

Meadox Weaving Co., 220 Seventeenth St., West New York, N. J., has arranged for purchase of former plant of Vogue Needlecraft Co., Wanamaker and Prospect Aves., Waldwick, N. J., consisting of several one and two-story buildings, totaling about 31,000 sq. ft. of floor space, and will improve and equip for new mill, removing present plant to new location. Facilities will be provided for about 400 workers.

Morristown (Tenn.) **Silk Mill** may be remodeled to adapt it to the manufacture of rayon woven goods.

Rusco Textile Co. is opening a mill in Newark, N. J., to replace one which burned in Schenectady, N. Y. recently. Fabric woven by Ogdensburg (N. Y.) Silk Mills will hereafter be sent to Newark for stamping and rubberizing. Both plants are controlled by the Capital Silk Co.

Sterling Silk Mill, Inc., Mifflinburg, Pa., has been chartered to take over and operate local mill of Myron and Francis Sterling, who will head the new organization.

Tennessee-Eastman Corp., Kingsport, Tenn., will build an addition to its acetate rayon yarn unit, to increase this unit's capacity about 12½%.

Knitting Mill News

Asheboro (N. C.) **Hosiery Mills** are installing 12 new full-fashioned machines, which will bring the total number to 32.

Brownhill & Kramer, Inc., Philadelphia, Pa., have sold their knitting mill at East Columbia Ave. and Memphis St., to Chesterman-Leeland Co., and will concentrate production at main mill in Coudersport, Pa. A one-story building is being erected at 432 Memphis St., Philadelphia, to be used for executive offices.

Chipman-Holton Knitting Co., Ltd., Hamilton, Ont., has completed a modern full-fashioned hosiery unit. Fancy half-hose machines have also been installed.

Classic Knitters, Inc., 133 West 21st St., New York, has been liquidated and its plant sold at auction.

Elting Bros., New York, has acquired from M. L. Victorius & Co. all their hosiery manufacturing equipment and a number of their brands. Burgio Bros. have taken over other brands and become selling agents for some of the mills previously sold through Victorius.

Harriman (Tenn.) **Hosiery Mills** have completed their $100,000 addition. Expansion in all departments will follow and 300 additional employees be hired.

Harris & Covington Hosiery Mill, Inc., High Point, N. C., has announced plans for

KNITTING CIRCULAR

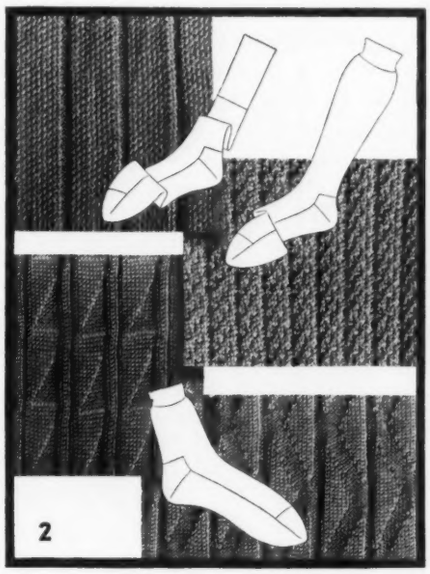
Volume–Generally Speaking

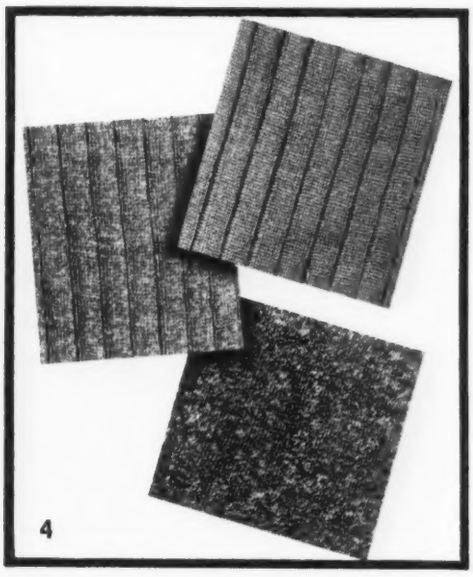
Buying agencies representing country-wide merchandising organizations have given our reporter the news of hosiery trends from coast to coast for this month's Knitting Circular. Shown here are samples of the type of volume merchandise that, generally speaking, is setting the sales pace in city, town and hamlet throughout the country.

One of the most interesting bits of news of country-wide importance is the tremendously increased sales of slack socks and anklets—reflected in the new high in hosiery sales set during 1939. This trend is expected to continue, according to the majority of firms which we interviewed. An unusual development is the growing demand in many quarters for the 12″ sock for men.

Representative of what is selling in volume to men throughout the nation are the items shown at right in Group 1. First, at the top is a 35¢ black and white 9″ slack sock of twisted yarn with vertical wrap pattern and a color-in-color wrap clock. This is from Murphy, Brill & Sahner. Next to it is the Baker-Cammack new 12″ "High Slax" sock—gray with red and white and black panel wrap. The remaining two illustrate a new pattern in two different lengths (slack sock and the conventional half hose), with horizontal stripes and vertical wrap designs, in six attractively blended wrap colors. All of these can be made on the Scott & Williams HH-PW machine, which offers economical production of any length socks, any length of ribbed-elastic or non-elastic-tops, 24 colors, and color-in-color or color-beside-color wrap designs. Thus, short or long, 9″ or 12″ or regular half hose, whichever way the demand leans, you can cover the market with the right lengths and the right patterns too, if you are equipped with the HH-PW.

Komet Links-and-Links merchandise for men, women, and children continues to increase in popularity with new colors and designs appearing everywhere. First in Group 2 is a man's broad ribbed Links-and-Links—a new pattern. Next is a fast-selling knee-length Links-and-Links pattern for women. Also illustrated are two remarkably interesting patterns that go well wherever shown.





"Children's Hose", a large distributor, reports that the 50¢ fine gauge Komet Links-and-Links anklet shown first in Group 3, a plain anklet with cable top at 25¢, and the regular Komet 2x2 up-and-down anklet at 35¢, are country-wide sellers.

According to buyers and representatives for stores in all parts of the country, there is a large market for hose in the 10, 12½ and 15 cent price range. However, there is a feeling among many that they will be unable to keep on getting the same quality in lightweight work socks and low end hosiery because many manufacturers do not have the latest type of automatic machines to produce it economically. That it is possible to maintain quality in this price bracket is illustrated by the swatches in Group 4, all knit on the HH machine by Jordan Mills. Top swatch is of a green 15¢ sock of mercerized cotton with sinker drop stitch vertical wales. Next is a 12½¢ cotton heather, also with sinker drop stitch. The third is a 10¢ work sock of mixed color cotton with white heel and toe. To mills that find difficulty producing such popular items profitably, Scott & Williams suggests the HH 3¾″-176 Needle Machine, which does the job with great economy and efficiency.

Scott & Williams will be glad to give further information regarding the machines that produce the merchandise shown here.

SCOTT & WILLIAMS, INC., 40 Worth Street, New York, N. Y.

Established 1865

SUPER-FIN.....

- for Dyeing without Grease Spots
- ***in spite of hard water or oils in the goods***
- Super-Fin for hosiery finishing has great emulsifying qualities. Improves finish. Adds elasticity to silk. Treat every bath with Super-Fin and get even dyeing, avoid re-dyes. Replace an equal amount of degumming with Super-Fin, at no extra cost, and get a better finished product.
- Other high grade "Standard" Products include Drummond Soap, Stanso Palm Oil Curd Soap, etc., etc.

STANDARD SOAP CO. OF CAMDEN
1918 South Sixth Street **Camden, New Jersey**

A Guaranteed uniform tension, universal in application.
NO RESETTING.

Self-cleaning—no oiling. Output increased. Quality improved.
Thousands already in service.

ROBERT REINER, INC. **Weehawken, N. J.**
Builders of creels and warping equipment

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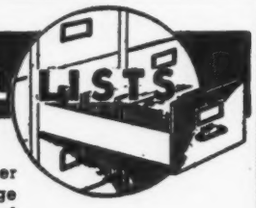

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construction of a new boiler-room to cost about $2,500.

Laurentian Textile Mills, Ltd., a new knitting firm, will soon begin operations in St. Jerome, Que., on knitted piece goods, sweaters, jerseys, etc.

Liberty Hosiery Mill, Lyerly, Ga., is now operating on infants' anklets and half socks. J. W. Woods is president and superintendent; J. S. Owings is secretary. Company is a reorganization of the old Shugart Hosiery Mills.

Martin Brothers, Middlesboro, Ky., are reported to have plans under way for establishment of a seamless hosiery mill. They have already purchased machinery.

May Hosiery Mills, Burlington, N. C., are constructing a small addition to the full-fashioned hosiery mill at a cost of $7,000, for storage purposes.

Providence (Ky.) **Textile Association** may soon reopen its hosiery mill under the direction of W. M. Kohl of Lykens, Pa.

Real Silk Hosiery Mills, Dalton, Ga., unit, are installing additional new full-fashioned machines.

Rosedale Knitting Co., Inc., Reading, Pa., normally employing about 2,500 people are practically closed down, due to lack of business.

Sand Knitting Mills Co., Inc., 1718 North Damen St., Chicago, Ill., has leased a floor in the industrial building at 2331-41 North Washtenaw Ave., and will occupy for plant.

Standard Hosiery Mills, Alamance, N. C., installed 20 new 200-needle "Komet" links-and-links machines in January and 10 of the 132-needle size last month.

Superior Underwear Mill has been incorporated at Bechtelsville, Pa. for the manufacture of knit underwear, by Ritter & Wagner.

Surratt Bros., Lexington, N. C., have established a new knitting mill in the Jackson Hill district, near city, to produce anklets and socks.

Unity Hosiery Mills, Inc., Union, S. C., newly organized, with E. F. Hartman, president, and H. P. Hartman, treasurer, has begun operations with eight full-fashioned machines.

Utica (N. Y.) **Knitting Co.** has filed plans for one-story addition to power house. Cost estimated close to $70,000, with boilers and auxiliary equipment. Gibbs & Hill, New York, N. Y., are consulting engineers.

Williamson Hosiery Mills, Englewood, Tenn., have begun production of combed and mercerized cotton anklets for women and children. A. J. Williamson is owner and superintendent of the new hosiery company which has taken over the plant of the old Englewood Mills.

Processing Plant News

Bell Piece Dye Works, Paterson, N. J., has begun work in plant formerly occupied by Erie Piece Dye Works. Walter Hascup is president.

Crown Converting Co., Lincolnton, N. C., has begun operations in its new plant. Occupying the old Elm Grove Cotton Mill, which has been completely modernized and equipped with fluorescent lighting, new equipment has been installed, which includes a Smith-Drum skein mercerizing machine, a # 102 Foster winder, six Universal winders, a Proctor dryer, and a 212 H.P. boiler. The company has recently inaugurated vat and naphthol dyeing of yarns.

Delmoore Dye Works, Inc., Cold Spring (Putnam County), N. Y., recently chartered under direction of Herman Goldman, 120 Broadway, New York, N. Y., plans operation of a local dyeing and finishing mill.

Glenn Mfg. Co., Lincolnton, N. C., has installed new equipment in the dyeing department and this department's capacity has been increased 50%.

Fairforest Finishing Co., Clevedale, S. C., has completed an addition, 105 x 131 ft. The new building provides space for stock of finished goods and new and larger office space.

North Georgia Processing Co., Toccoa, Ga., has purchased almost 100 acres of additional land, A. J. Morse, general superintendent, announces. Company will install a conveyor to facilitate transferring materials from mill to warehouse. Company will also install a sprinkler system, and a 50,000-gallon additional tank to insure adequate fire protection.

Paton Mfg. Co., Sherbrooke, Quebec, has installed a stainless steel "Tru-Shade" dyeing machine made by Rodney Hunt Machine Co., Orange, Mass. It is used to dye the brilliant scarlet cloth used in the uniforms of the Canadian "mounties".

Rock Hill (S. C.) **Printing & Finishing Co.** has completed a one-story addition 183 x 386 ft.

Swansea (Mass.) **Print Works** have been reorganized with J. Reid Johnson of New London, president. Fenton M. Chace is plant manager.

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H. G. LORD Comments on

The Knitting Industry

Whenever the Knitting Show comes around, I always think of the first little show that was held thirty-five years ago on the ground floor of a warehouse building on Chestnut Street. As a matter of fact, I think there were several shows held in mercantile buildings downtown, before they were moved to the Armory and then later to the Commercial Museum. Although most of the exhibitors of those early shows are still going strong today, some have fallen by the wayside, but many new ones have taken their place, and the type of machinery and equipment is vastly different.

Twenty-five years ago a large proportion of the knitting needles were imported from Germany. When the war broke out a very serious situation arose. I recall that a consignment of needles for full-fashioned knitting machines was sent over on a German submarine that made a crossing in 1915. When we got into the war, the supply of American-made needles was very inadequate for some time and it was necessary that they should be preferentially and impartially allocated to those mills which were working on government orders.

One day, when I was in my Boston office, a telephone message came from Harry Swinglehurst asking me if I could go up to the Parker House at once. When I arrived and was shown up to his room, I found a group of about twenty knitting needle manufacturers sitting around discussing the problem of needle allocation. They explained to me the difficulty of any one of them undertaking the job and had come to the conclusion that it should be undertaken by some impartial agency in which the industry would have confidence and which was familiar with the requirements of the different mills and sources of supply, and they had agreed to ask TEXTILE WORLD to undertake the job. While we were complimented at the confidence shown, I felt the responsibility was too great and the necessary authority to enforce decisions would be lacking and likely to lead to confusion. I suggested that the allocation should be made through a governmental agency and that was the way it was handled.

The war was a great stimulus to American knitting needle manufacture which, in a comparatively short time, was able to meet the requirements of domestic mills.

In those days the text matter for the Knitting Department of TEXTILE WORLD was entirely devoted to the technique of the knitting processes. Today I find many more subjects of interest to the knitting mill treated in the editorial pages, having to do with engineering problems, lighting, heating, employee relations, yarn selections, dyeing and finishing processes and almost everything relating to the operation of a knitting mill.

There is no branch of the textile industry that has made more progress or more radical changes in equipment and processes than the knitting section. It is certainly interesting to look over the knitting pages of TEXTILE WORLD fifty years ago and see the long way that we have come in that half century.

H. G. LORD, *founder of Textile World in 1888 and president, Bragdon, Lord & Nagle Division, McGraw-Hill Publishing Co.*